DELHI PUBLIC SCHOOL, BHILAI

DATE : 04.12.2023 | **PREBOARD EXAMINATION 2023-'24** | **Time : 3 Hrs.**

CLASS : XII | **SUBJECT – ENGLISH (CORE)** | **Max. Marks : 80**

General Instructions.

- The paper is divided into three sections: A, B and C. All the sections are compulsory.
- Specific instructions, wherever necessary, are given. Follow them strictly.
- Read the division of the marks as "number of question(s) x mark(s) = total."

SECTION-A : READING SKILLS (22 MARKS)

Reading Comprehension Through Unseen Passages

I.	**Read the passage below carefully and answer the questions that follow it :**	**12 marks**

1. Twenty-six-year-old Verhaen Khanna is not your garden variety green crusader. He's on a mission to cure 'tree blindness'- the habit of not looking at trees. "People just walk past them," he complains, at his New Friends Colony residence office, clad in Batman pyjamas and bathroom slippers. Khanna, as part of New Delhi Nature Society which he set up last year, is educating Delhities about trees in a unique way- by teaching them how to climb them.
2. A generation ago, the practice was commonplace but with today's increasingly indoor living, learning to scale the neem next door sounds like a spot of daredevilry. Anuj Wadhwa, a 26 year old garment exporter learnt to shimmy up trees a few months ago. "Spending time with nature and climbing trees become a spiritual exercise for me. Once you're in a tree, you become part of its ecosystem, which includes birds, insects, fruits and flowers, " says Wadhwa who can spend 40-45 minutes hanging out on tree branches, sometimes with a cup of green tea in hand.
3. But it's all about barking up the tree right. "It depends on how and where you sit," Khanna points out. "You have to find a cosy nook, maybe a Y-or a V-shaped branch. Find a hook to rest your arm. Or, you can lie down. It can get so comfortable that I have to warn people from falling off to sleep." A trained commercial pilot, Khanna organizes periodic campouts around Delhi - Jahanpanah city forest near GK-II, Asola Sanctuary, Lodhi Garden, Nehru Park, colony parks in New Friends Colony, Maharani Bagh, GK-I etc.- where he not only teaches members how to climb trees, but also to make a fire, count GPS satellites and stars.
4. While Khanna provides tents and other equipment on these free jaunts, participants have to bring their own food. The tree-lover funds his woody ambitions with his day job as business developer, and as a light painting artist at OLE India- a collaborative of professionals and free thinkers. He has also uploaded tree-climbing tutorials on YouTube. When climbing a straight trunk (coconut or palm), ascend using both arms in tandem (like in a hug) instead of alternating them. But banyan trees, with thick, low lying branches and vines offer a relatively easy climb.
5. Anyone can join NDNS and it's free. The year-old society has been attracting members through word of mouth and sight- the image of men and women sitting atop trees in various city parks. Khanna has organized six outdoor camps in the past year and has taught around 30 people to climb trees. Once up, he briefs participants about the tree and its ecosystem. Details like what kind of fruit and flower it bears, their benefits, the shape and size of leaves, kinds of insects, birds and squirrels living on it, any folk tales associated with it are discussed and shared.
6. If you want to do your climbing yourself, look for a sturdy tree which doesn't have red ants on its branches and is clear of broken glass or injury-causing material at its base. Its branches should be thicker than your arm. When you climb, never go right to the edge of the branch. The aim is not to climb high but to find a comfortable resting place with a good back rest. Climb slowly and keep close to the tree; it will support you. Neem, mango and banyan trees are easy to climb. Newbies should have a friend on the ground to watch out for them.
7. For Masrat Khan, a communication expert, the experience brings out the child in her. When not scaling trees, NDNS members are busy doing "guerilla gardening"-planting hardy local tree varieties like neem, babul and jamun wherever possible and often without permission. Their mission to cure tree blindness continues.

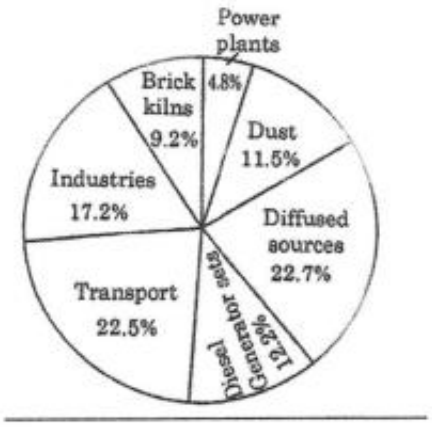
Answer the following questions, based on the passage above.

i.	What is the aim of climbing a tree if you want to do it yourself? (a) Go as high as possible to get a good view (b) Climb only neem, mango and banyan trees (c) Find a comfortable resting place with a good back rest (d) None of the above	1
ii.	The members of the NDNS plant all the trees EXCEPT (a) Oak (b) Babul (c) Neem (d) Jamun	1
iii.	Comment on the writer's statement that climbing trees is a sport of daredevilry and a spiritual exercise.	2
iv.	Complete the given sentence with an appropriate inference, with respect to the following. The writer called disregard for trees as 'tree blindness' because.....	1
v.	Select the word that conveys the same meaning as 'excursion', from words used in Paragraph 4. (a) Jaunts (b) ambitions (c) collaborative (d) tutorials	1
vi.	List the activities that the members of the NDNS club participate in.	2
vii.	How does the NDNS attract members?	1
viii.	The NDNS initative not only teach people how to climb trees but also teach them other details regarding trees. Do you agree ? Give reasons for your answer.	2
ix.	Pick the option that correctly lists the final feelings of V Khanna with reference to the climbing experience. 1. Satisfying 2. Sustainable 3. Spiritual 4. Healthy 5. Heart-breaking (a) 1, 3 (b) 2, 5 (c) 1, 2 (d) 3, 5	1

II.	Read the passage given below.	10

1. Air pollution is a major threat to human health. The United Nations Environment Programme has estimated that, globally, 1.1 billion people breathe in unhealthy air. The World Health Organization (WHO) has estimated that urban air pollution is responsible for approximately 800,000 deaths and 4.6 million people lose their lives every year around the globe.
2. Traffic and transportation problems, inadequate drainage facilities, lack of open spaces, carbon emission and the accumulation of waste aggravate the problem. Air pollution is associated with increased risk of Acute Respiratory Infections (ARI), the principal cause of infant and child mortality in developing countries.
3. Urban air quality in most mega cities has been found to be critical and Kolkata is no exception to this. An analysis of ambient air quality in Kolkata was done by applying the Exceedance Factor (EF) method, where the presence of listed pollutants' (RPM, SPM, NO, and SO) annual average concentration are classified into four different categories; namely critical, high, moderate, and low pollution. Out of a total of 17 ambient air quality monitoring stations operating in Kolkata, five fall under the critical category, and the remaining 12 locations fall under the high category of NO, concentration, while for RPM, four record critical, and 13 come under the high pollution category. The causes of high concentration of pollutants in the form of NO, and RPM have been identified in earlier studies as vehicular emission (51.4%), followed by industrial sources (24.5%) and dust particles (21.1%).
4. Later, a health assessment was undertaken with a structured questionnaire at some nearby dispensaries which fall under areas with different ambient air pollution levels. Three dispensaries have been surveyed with 100 participants. It shows that respondents with respiratory diseases (85.1%) have outnumbered waterborne diseases (14.9%) and include acute respiratory infections (ARI) (60%), chronic obstructive pulmonary diseases (COPD) (7.8%), upper tract respiratory infection (UTRD) (1.2%), Influenza (12.7%), and acid-fast bacillus (AFB) (3.4%)
5. To live a healthy life and have better well-being, practising pollution averting activities in one's day-to-day life is needed. These pollution averting practices can only be possible when awareness among the masses is generated that the air they breathe outdoors is not found to be safe.

Pollution in India



Answer the following questions, based on the given passage.

i.	Infer main idea of the survey, highlighted in the given passage.	2
ii.	Select the option that displays the correct 'cause and effect' relationship. (a) Cause: traffic and transportation problem :: effect: 4.6 million deaths (b) Cause: lack of open spaces :: effect: mega cities (c) Cause: air pollution :: effect respiratory diseases (d) Cause: air quality monitoring stations:: effect: emission of NO2	1
iii.	How many people lose their lives due to air pollution every year in India?	1
iv.	Identify the person suffering from a disease caused due to air pollution. (a) Roshani - I'm suffering from fever since last week. (b) Ciara-I'm suffering from baldness. (c) Hamid-I'm suffering from respiratory disorders. (d) Mona - I am suffering from a fractured femur bone.	1
v.	Which of the following is the correct opinion of the researcher on the development of mega cities? (a) Cities face transportation problems due to heavy traffic. (b) Urbanization leads to deterioration of air quality. (c) Small towns are the right spots to study air pollution. (d) Cities face the problem of congestion.	1
vi.	What is the recommendation to the readers from researcher's point of view ?	2
vii.	Complete the sentence appropriately. Pollution caused by transport is..... than Industries	1
viii.	State TRUE or FALSE. The use of diesel generator is responsible for more than fifty per cent of air pollution.	1

Contd...3

SECTION-B : CREATIVE WRITING SKILLS (18 marks)

III.	Answer **ANY ONE** of the following.	**4**
A	You are Sahil Sagar, the President of Nehru Youth Club, Delhi. You have planned to take a trekking trip for 15 days to Rohtang Pass next month. Write a notice giving all necessary information to invite participants for the trekking programme.	
	OR	
B	Water supply will be suspended for eight hours (10 am to 6 pm) on 16th November for cleaning of the water tank. Draft a notice in not more than 50 words advising the residents to store water for a day. You are Karan/Karuna, Secretary, Janta Group Housing Society, Palam Vihar, Kurnool. Don't forget to express your regret.	

IV.	Answer **ANY ONE** of the following.	**4**
A	You are Saurab/Samaira Chaturvedi living at C-404, Adharsila Apartments, New Delhi. You decide to hold a dinner party to congratulate your grandfather on his 100th birthday. Draft a formal invitation in not more than 50 words to all family members to attend a grand dinner at home.	
	OR	
B	Sunrise Global School, Agra is going to organize a one-act play competition in the school auditorium. You have decided to invite the noted stage artist, Nalini, to grace the occasion. Draft a formal invitation for her in about 50 words. You are Akhilesh Pandey, Cultural Secretary.	

V.	Answer **ANY ONE** of the following.	**5**
A	You have recently come across an advertisement for the post of a software engineer in S.K. Global Solutions. Write an application with bio-data in about 120-150 words to The Manager, S.K. Global Solutions, J.P. Nagar, Bangalore. You are Ranjan/Ritu of Indra Nagar, Bangalore. **SK GLOBAL SOLUTIONS** **Required Software Engineer** **Job Responsibilities:** -Write well-designed software -Develop layouts -Execute software development cycle. **Preferred Skills & Qualifications:** -B. Tech. - Computer Science -Experience-3-5 years.	
	OR	
B	You are Sujoy/Sujata of Nehru Colony, Indore. You recently visited Shimla with your family You were perturbed to see the tourists throwing empty water bottles and cans all over the place. Write a letter to the editor of national daily in about 120-150 words expressing your concern and offering suggestions to improve the situation. Use the given cues along with your own ideas to compose the letter. Eco-Friendly Travel - create less waste - dispose garbage properly - 40% pollution increase during the tourist season - do sustainable travel - waste and pollution have far-reaching impact on wildlife, environment, visitors and communities - create clean and healthy vacation destination - Ecological Conservation. Need of the hour	

VI.	Answer **ANY ONE** of the following, in about 120 to 150 words.	**5**
A	India is emerging as one of the most popular tourist destinations in the world. The number of tourists has definitely picked up after the pandemic. The government of India is making sustained efforts in projecting India as a great tourist destination but the citizens also need to understand their duties. Utilising the given cues, write an article on 'India - the popular choice of foreign visitors', as Lakshya Sen. - India-the best destination for tourists - tourist industry-seeing a new influx - pollution, crimes, etc. hinder the growth - strengthening the efforts of the ASI, NGOS - e-visa facility - medical tourism, eco tourism - generate jobs for local people, local culture, food, handicrafts etc.	
	OR	
B	You are Ankit/ Ankita Singh , a student of Class XII at Sunshine Public School, New Delhi. You watched the cricket world cup match live on TV, which was played at Narendra Modi stadium in Ahmedabad on 19 November 2023. Utilising the given cues, write a report for a youth magazine. - India reached the finals after defeating New Zealand in the Semi finals. - India and Australia played the final - Progress of the match - Audience response - Outcome of the match	

Contd...4

SECTION C : LITERATURE TEXTBOOK AND SUPLEMENTARY READING TEXT (40 marks)

VII.	**Read the given extracts and answer the questions for ANY ONE of the following:**	6
A.	"The hurt to the scenery wouldn't be my complaint So much as the trusting sorrow of what is unsaid: Here far from the city we make our roadside stand And ask for some city money to feel in hand To try if it will not make our being expand, And give us the life of the moving-pictures' promise That the party in power is said to be keeping from us." (A Roadside Stand)	
i.	Fill in the blank with reference to the context. The roadside stand was made by the..... and it was..... (a) city people, near their houses (b) villagers, at their courtyards (c) poor people, far from the city (d) rich people, on the mountains	1
ii.	Identify the phrase from the extract that suggests the following: The poet does not want to accuse the rustics of spoiling the beauty of the landscape.	1
iii.	State whether the given statement is True or False. The city people wanted to feel the money in their hands.	1
iv.	Complete the sentence appropriately. The promise made by the government was that.....	1
v.	The poetic device used in 'the trusting sorrow' is (a) oxymoron (b) transferred epithet (c) simile (d) metaphor	1
vi.	Do you think that the promise made by the government was fulfilled?	1
	OR	
B	"Aunt Jennifer's fingers fluttering through her wool Find even the ivory needle hard to pull. The massive weight of Uncle's wedding band Sits heavily upon Aunt Jennifer's hand. When Aunt is dead. her terrified hands will lie Still ringed with ordeals she was mastered by The tigers in the panel that she made Will go on prancing, proud and unafraid." (Aunt Jennifer's Tigers)	
i.	What do the proud and unafraid tigers, stand for? (a) They embody the grandeur and supremacy of animals in the wild.. (b) They symbolise authority and are topaz denizens of green. (c) They represent Aunt's repressed desires for freedom and power. (d) They are a product of Aunt's imagination and colonial experience.	1
ii.	How would you describe Aunt Jennifer based on the above extract?	1
iii.	These tigers indicate..... (a) freedom and bravery (b) the skill of her needle work (c) transience of human life (d) change in Aunt's condition	1
iv.	State True or False. The Uncle's wedding band is a symbol of Aunt Jennifer's restricted life in a patriarchal setup.	1
v.	Pick an example of alliteration present in the extract.	1
vi.	Answer in ONE word or a phrase. The existence of the tigers even after Aunt Jennifer's death indicates the theme of liberation from	1
VIII.	**Read the given extracts and answer the questions for ANY ONE of the following:**	4
A.	My elder brother was there. I told him the story in all its comic detail. I fell about with laughter at the memory of a big man and an elder at that, making such a game out of carrying the parcel. But Annan was not amused. Annan told me the man wasn't being funny when he carried the package like that. He said everybody believed that they were upper caste and therefore, must not touch us. (We Too are Human Beings- Memories of Childhood)	
i.	What problem has been highlighted in the given extract?	1
ii.	The story referred to in the extract is about (a) the puppet show she had seen (b) the way in which the old man was carrying the parcel (c) the things that she had seen on her way home (d) the monkey show she had encountered	1
iii.	'Making such a game' means.....	1
iv.	Why was Annan not amused?	1

Contd...5

	OR	
B.	Now, I don't know why this should have happened to me. I'm just an ordinary guy named Charley, thirty-one years old and I was wearing a tan gabardine suit and a straw hat with a fancy band, I passed a dozen men who looked just like me. And I wasn't trying to escape from anything, I just wanted to get home to Louisa, my wife.	
i.	When did 'this' incident take place? (a) While he was going to visit his father (b) While he was going to work (c) While he was going to his psychiatrist friend (d) While he was returning late from work	1
ii.	Complete the sentence appropriately. The given lines show that the narrator, Charley wanted to	1
iii.	The narrator said that he was not trying to escape from anything because his psychiatrist friend told him that	1
iv.	What does 'this' refer to?	1
IX.	**Read the given extracts and answer the questions for ANY ONE of the following:**	6
A.	Some might make quite extravagant claims for it as being, in its highest form, a source of truth, and, in its practice, an art. Others, usually celebrities who see themselves as its victims, might despise the interview as an unwarranted intrusion into their lives, or feel that it somehow diminishes them, just as in some primitive cultures it is believed that if one takes a photographic portrait of somebody then one is stealing that person's soul.	
i.	What is the most likely reason some people consider the practice of interview to be an art? This could be because it requires A. fluency of words. B. sensitive and careful handling. C. creativity and imagination. D. probing and focusing on details.	1
ii.	Rewrite the sentence by replacing the underlined phrase with its inference. Celebrities feel that an interview 'diminishes them'.	1
iii.	On the basis of the extract, choose the correct option with reference to the two statements given below. (1) Celebrities don't consent to be interviewed. (2) Interviews intrude the privacy of celebrities. A. (1) Can be inferred from the extract but (2) cannot. B. (1) cannot be inferred from the extract but (2) can. C. (1) is true but (2) is false. D. (2) is the reason for (1).	1
iv.	Rationalise, to support the given opinion: To say that an interview, in its highest form, is a source of truth, is an extravagant claim.	1
v.	Replace the underlined word with its antonym from the extract. Some celebrities hate the idea of having to give an interview because it makes them feel like supporters.	1
vi.	The author's views on interview, in the extract, can best be described as statements based on _____. A. facts B. hypothesis C. beliefs D. superstitions	1
	OR	
B.	They had merely heard that a Mahatma who wanted to help them was in trouble with the authorities. Their spontaneous demonstration, in thousands, around the courthouse was the beginning of their liberation from fear of the British. The officials felt powerless without Gandhi's cooperation. He helped them regulate the crowd. He was polite and friendly. He was giving concrete proof that their might, hitherto dreaded and unquestioned, could be challenged by Indians. The government was baffled. The prosecutor requested the judge to postpone the trail. Apparently, the authorities wished to consult their superiors.	
i.	According to the extract, why had the crowd gathered around the court room?	1
ii.	Why did the officials feel powerless? (a) Because of Gandhi's refusal to cooperate with them. (b) Because of Gandhi's polite and friendly behaviour. (c) Because the crowd was listening only to Gandhi. (d) The crowd was getting violent.	1
iii.	Complete the sentence appropriately. The prosecutor requested the judge to postpone the trial because	1
iv.	What style is being used by the author when he says. "Apparently, the authorities wished to consult their superiors"? (a) humorous (b) dramatic (c) sarcastic (d) persuasive	1
v.	What was the beginning of the liberation of Indians from the British rule?	1
vi.	(Which of the following headlines best suggests the central idea of the extract? (a) Gandhi's leadership quality (b) The tyranny of the British officials (c) Postponement of trail (d) The friendly behaviour of Gandhiji.	1

X.	**Answer ANY FIVE of the following six questions in about 40-50 words, each.**	5x2=10
i.	Mention the changes that came over little Franz after he heard M Hamel's announcement. (The Last Lesson)	
ii.	What made the peddler finally change his ways? (The Rattrap)	
iii.	Kothamangalam Subbu was considered No. 2 in Gemini Studios. Explain why? (Poets and Pancakes)	
iv.	What is the reason for the huge success of the novel, 'The Name of the Rose'? (The Interview)	
v.	What were the poet's feelings at the airport? How did she hide them? (My Mother at Sixty-six)	
vi.	What are the gifts of nature that the poet appreciates? (A Thing of Beauty)	

XI.	**Answer ANY TWO of the following questions, in about 40-50 words.**	2x2=4
i.	Why did Zitkala-Sa resist the shingling of her hair? (Memories of Childhood)	
ii.	Was the Tiger King a fair ruler who had the best interest of his citizens at heart? Give reasons. (The Tiger King)	
iii.	Why was 'Akademik Shokalskiy' heading towards Antarctica ? (Journey to the End of the Earth)	

XII.	**Answer ANY ONE of the following questions, in about 120-150 words**	5
A	The prose sections - 'Lost Spring' and 'Going Places' - bring out the different versions of aspirations and dreams of the youth and the pain of unfulfilled promises and shattered dreams. As the Head Boy/Girl of the school, Mohit / Mohita, draft a speech for the morning assembly elaborating the occurrences from the two texts to inspire the audience and to convince them about the importance of realistic dreams over unrealistic ones. **You may begin like this .....** Good Morning, Principal Sir, teachers and my dear friends. Today I stand before you.....	
	OR	
B	"Hi, skinny, how'd you like to be ducked?" Later, the boy said, "But I was only fooling." The youth today is characterized by a total absence of concern for others. They also act without thinking how their deeds may have long lasting effect on others. Imagine yourself to be the boy who saved William Douglas at the swimming pool. Write a diary entry about what you saw and felt on that day. **You may begin like this .....** Place Day Date Time I am still not able to overcome the shock ..... Conclude the diary entry emphasising the need for inculcating regard for the fellow beings.	

XIII.	**Answer ANY ONE of the following questions, in about 120-150 words.**	5
A	In the lesson 'On the Face of It', both Derry and Mr Lamb are physically impaired and lonely. It is the responsibility of the society to understand and support people with infirmities, so that they do not suffer from a sense of alienation. As a responsible citizen, write a blog on what you would do to bring about a change in the lives of such people. **You may begin like this .....** Today, people are cold blooded. They have little care for others...	
	OR	
B	As prisoner of war, Tom feels blessed and is very grateful to Dr Sadao and his wife for their thoughtfulness, dedication and compassion, throughout the treatment. After reaching home, he writes his thoughts reflecting on how Dr Sadao and his wife Hana prove that 'The greatness of humanity is not in being human, but in being humane'. Imagine yourself as Tom and express these thoughts in the form of a diary entry . **You may begin like this .....** Place Day Date Time May God bless Dr Sadao and his family. The angels in human disguise.....	

DELHI PUBLIC SCHOOL, BHILAI

DATE : 11.12.2023 **PREBOARD EXAMINATION 2023-'24** **Time : 3 Hrs.**
CLASS : XII **SUBJECT – MATHEMATICS (041)** **Max. Marks : 80**

General Instructions:

1. This question paper contains five sections A, B, C, D and E. Each section is compulsory.
2. Section – A carries 20 marks weightage, section – B carries 10 marks weightage, section – C carries 18 marks weightage, Section – D carries 20 marks weightage and section – E carries 3 case-based with total weightage of 12 marks.
3. **Section – A** comprises 20 MCQs of 1 mark each.
4. **Section – B** comprises 5 VSA type questions of 2 marks each.
5. **Section – C** comprises 6 SA type of questions of 3 marks each
6. **Section – D** comprises 4 LA type of questions of 5 marks each.
7. **SECTION – E** It has 3 case studies. Each case study comprises 3 case-based questions, where 2 VSA type questions are of 1 mark each and 1 SA type question is of 2 marks. Internal choice is provided in 2 marks question in two case-study.
8. Internal choices are provided in 2 questions in section – B, 3 questions in section – C, 2 questions in section – D. You have to attempt only one of the alternatives in all such questions.

SECTION A

1. Let $A = \{1,2,3\}$, which of the following is not an equivalence relation
   (a) $\{(1,1)(2,2)(3,3)\}$ (b) $\{(1,1)(2,2)(3,3)(1,2)(2,1)\}$
   (c) $\{(1,1)(2,2)(3,3)(3,2)(2,3)\}$ (d) None of these

2. Let A and B be 3×3 matrices such that $A' = -A$ and $B' = B$ then matrix $\lambda\, AB + 3BA$ is a skew symmetric matrix for
   (a) $\lambda = 3$ (b)) $\lambda = -3$ (c) $\lambda \neq 3$ (d) $\lambda \neq -3$

3. Given that A is a square matrix of order 3 and $|A| = -4$, then $|adjA|$ is equal to
   (a) -4 (b) 4 (c) -16 (d) 16

4. Let A be non-singular matrix of order n, then $|adj(adjA)|$ is equal to
   (a) $|A|^{n-1}$ (b) $|A|^{n-2}$ (c) $|A|^{(n-1)^2}$ (d) $|A|^{n^2}$

5. The maximum value of $Z = x + y$, subject to constraints $x - y \leq -1, -x + y \leq 0, x, y \geq 0$
   (a) 1 (b) -10 (c) 1 (d) no value

6. If a matrix A is both symmetric and skew symmetric matrix then
   (a) A is a diagonal matrix (b) A is a null matrix
   (c) A is a square matrix (d) A is a non-singular matrix

7. If $f(x) = \begin{cases} \frac{\sin 3x}{2x}, x \neq 0 \\ k+1, x = 0 \end{cases}$ is continuous at $x = 0$, then the value of k is
   (a) $\frac{1}{2}$ (b) -1 (c)) $\frac{-3}{2}$ (d) -2

8. If $y = tan^{-1}(\cot x)$, then $\frac{dy}{dx}$ is equal to
   (a) $\frac{11}{2}$ (b) 0 (c) -1 (d) 1

9. The function $f(x) = (x - \sin x)$ decreases for
   (a) $x \in R$ (b) $x < \frac{\pi}{2}$ (c) $0 < x < \frac{\pi}{4}$ (d) no value of x

10. $\int e^x \frac{x}{(x+1)^2} dx =$
    (a) $\frac{e^x}{(x+1)^2} + c$ (b) $\frac{xe^x}{x+1} + c$ (c) $\frac{e^x}{x+1} + C$ (d) $\frac{-e^x}{x+1} + c$.

11. $\int_0^a \frac{dx}{2+8x^2} = \frac{\pi}{16}$, then the value of a is
    (a) $\frac{1}{2}$ (b) 2 (c) $\frac{1}{4}$ (d) 4

12. $\int_{\frac{1}{2}}^{\frac{\sqrt{3}}{2}} \frac{dx}{\sqrt{1-x^2}} =$
    (a) $\frac{\pi}{4}$ (b) $\frac{\pi}{3}$ (c)) $\frac{\pi}{6}$ (d) $\frac{\pi}{2}$

13. The integrating factor of differential equation $(x + y)dy = dx$, is
    (a) e^y (b) e^{-y} (c) e^x (d) e^{-x}

Contd...2

14. The sum of order and degree of differential equation $x + \frac{dy}{dx} = \sqrt{\frac{d^2y}{dx^2}}\ sinx$

(a) 2 (b) 4 (c) 3 (d) not defined

15. If for three non-zero vectors $\vec{a}, \vec{b}$ *and* $\vec{c}$; $\vec{a} \times \vec{b} = \vec{c}$, and $\vec{b} \times \vec{c} = \vec{a}$ then

(a) $\vec{a}, \vec{b}, \vec{c}$ are parallel to each other (b) $\vec{a}, \vec{b}, \vec{c}$ are perpendicular to each other

(c) $\vec{c} \times \vec{a} = \vec{a} \times \vec{b}$ (d) none of these

16. If $|\vec{a}| = 5, |b| = 13$ and $|\vec{a} \times \vec{b}| = 25$,then $\vec{a}.\vec{b}$ is equal to

(a) 12 (b) 5 (c) $\frac{1}{2}\sqrt{29}$ (d) 60

17. The angle between the pair of lines with direction ratios 2, 2, 1 and 4, 1, 8 is

(a) $cos^{-1}\left(\frac{2}{3}\right)$ (b) $cos^{-1}\left(\frac{1}{3}\right)$ (c) $cos^{-1}\left(\frac{4}{5}\right)$ (d) $cos^{-1}\left(\frac{3}{5}\right)$,

18. The value of p, so that the lines $\frac{1-x}{3} = \frac{7y-14}{p} = \frac{z-3}{2}$ and $\frac{7-7x}{3p} = \frac{y-5}{1} = \frac{6-z}{5}$ are perpendicular to each other.

(a) 3 (b)7 (c) 5 (d) 2

For questions 19 and 20, two statements are given – one labeled Assertion (A) and the other labeled Reason (R), select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:

(a) Both A and R are true and R is the correct explanation of the assertion

(b) Both A and R are true and R is not the correct explanation of the assertion

(c) A is true, but R is false

(d) A is false, but R is true

19. **Assertion (A) :** Consider the L.P.P., Maximize $Z = 4x + y$, subject to the constraints $x + y \leq 50, x + y \geq 100$ *and* $x, y \geq 0$, then maximum value of Z is 50.

Reason (R) : If the shade region is not bounded then maximum value can not be determined.

20. **Assertion (A) :** For a square matrix A, $(2A)^{-1} = \frac{1}{2}A^{-1}$.

Reason (R) : For any matrix A and scalar k, kA is matrix obtained by multiplying each element of A by k.

SECTION B

21. Let $f; X \to Y$ be a function ,define a relation R on X given by $R = \{(a, b); f(a) = f(b)\}$, show that R is an equivalence.

OR

Check whether a relation R on real numbers defined by $R = \{(a, b): a \leq b^2\}$ is reflexive, symmetric or transitive.

22. Find the value of $tan^{-1}\left(tan\frac{5\pi}{6}\right) + cos^{-1}\left(cos\frac{13\pi}{6}\right)$.

OR

Write the value of $tan^{-1}[2\ \sin(2\ cos^{-1}\frac{\sqrt{3}}{2})]$.

23. If $x^y = e^{x-y}$, then show that $\frac{dy}{dx} = \frac{\log x}{\{log(ex)\}^2}$.

24. Solve the differential equation $xdy + (y - x^3)dx = 0$.

25. If the angle between two vector $\vec{a}$ and $\vec{b}$ of equal magnitude is $\frac{\pi}{6}$ and $\vec{a}.\vec{b} = 2\sqrt{3}$, then find the magnitudes of the vectors.

SECTION C

26. Consider $f; R_+ \to [-9, \infty$, given by $f(x) = 5x^2 + 6x - 9$, show that f is bijective

OR

Let N be the set of natural numbers and R be the relation on N × N defined by $(a, b)R(c, d) \leftrightarrow ad(b + c) = bc(a + d)\ \forall (a, b)(c, d) \in$ N × N, show that R is an equivalence relation on N×N

27. If $x = sin\left(\frac{1}{a}\log y\right)$, then show that $(1 - x^2)y_2 - xy_1 = a^2y$.

OR

Find the point on curve $y = x^2$, where the rate of change of x-coordinate is equal to the rate of change of y −coordinate.

28. Find the area of the region included by the parabola $4y = 3x^2$ and the line $3x - 2y + 12 = 0$.

29. If $\vec{a} = \hat{\imath} + \hat{\jmath} + \hat{k}$ and $\vec{b} = \hat{\jmath} - \hat{k}$, then find a vector $\vec{c}$ such that $\vec{a} \times \vec{c} = \vec{b}$ and $\vec{a}.\vec{c} = 3$.

Contd...3

30. Find the minimum value of Z, where $Z = 3x + 2y$, subject to constraints
$$2x + y \geq 23, x + 3y \leq 24, x, y \geq 0$$

31. Find a for which $f(x) = \begin{cases} a\sin\frac{\pi}{2}(x+1), x \leq 0 \\ \frac{\tan x - \sin x}{x^3}, \ x = 0 \end{cases}$ is continuous at $= 0$.

OR

Find $\frac{d^2y}{dx^2}$ at $\theta = \frac{\pi}{2}$ if $x = a(\theta - sin\theta), y = a(1 + cos\theta)$.

SECTION D

32. Find A^{-1} if $A = \begin{bmatrix} 1 & 1 & 2 \\ 2 & -1 & 3 \\ 5 & -1 & -1 \end{bmatrix}$ to solve the system of equation:- $x + 2y + 5z = 10, x - y - z = -2,$ $2x + 3y - z = -11.$

33. Find the interval in which $f(x) = (x+1)^3(x-3)^3$ is increasing or decreasing

OR

Show that height of the cylinder of greatest volume which can be inscribed in a right circular cone of height h and semi-vertical angle α is one-third that of the cone and the greatest volume of the cylinder is $\frac{4}{27}\pi h^3 \tan^2\alpha$..

34. Evaluate: $\int\left(\sqrt{\cot x} + \sqrt{\tan x}\right) dx$

OR

Evaluate $\int_0^{\frac{\pi}{4}} \frac{\sin x + \cos x}{9 + 16\sin 2x} dx$

35. Find the equation of the perpendicular drawn from the point P(2, 4, −1) to the line $\frac{x+5}{1} = \frac{y+3}{4} = \frac{z-6}{-9}$. Also, write down the coordinates of the foot of perpendicular from P to the line.

SECTION -E

36. Case Study –1 A man has an expensive square shape piece of golden board of size 24 cm and is to be cut into a box without top by cutting from each corner and folding the flaps to form a box.

Based on the above, answer the following questions, show steps to support your answer.

(i) If the side of square to be cut from each corner be x and , then write the volume function for the box in terms of x

(ii) Find the critical point of function

(iii) Use first derivative test to find x for the maximum volume of the box.

OR

Use second derivative test to find x for the maximum volume of the box

37. Case Study – 2 The probability distribution function which shows the number of hours (X) during lockdown period in a day, is given by

X	0	1	2
P(X)	$3C^3$	$4C - 10C^2$	$5C - 1$

Based on the above, answer the following questions, show steps to support your answer.

(i) Find the value of $P(0 \leq X < 2)$.

(ii) Find $P(X \geq 0)$

(iii) Find the value of C

OR,

If $C = \frac{1}{3}$, evaluate $P(X \geq 1)$ and $P(X = 2)$

38. Case Study-3, One day a sangeet mahotsav is to be organized in an open area of Rajasthan. In recent years, it has rained only 6 days each year, Also, it is given that when it actually rains, the weatherman correctly forecasts rain 80% of the time. When it doesn't rain, he incorrectly forecast rain 20% of the time. If leap year is concerned,

Based on the above, answer the following questions, show steps to support your answer

(i) Find the probability that it rains on chosen day.

(ii) Find the probability that the weatherman predicts correctly.

(iii) Find the probability that it will rain on the chosen day, if the weatherman predicts rain for that day.

DELHI PUBLIC SCHOOL, BHILAI

DATE : 11.12.2023 | **PREBOARD EXAMINATION 2023-'24** | **Time : 3 Hrs.**

CLASS : XII | **SUBJECT – APPLIED MATHEMATICS (241)** | **Max. Marks : 80**

General Instructions:

1. This question paper contains five sections A, B, C, D and E. Each section is compulsory
2. Section-A carries 20 marks weightage, section-B carries 10 marks weightage, section-C carries 18 marks weightage, Section-D carries 20 marks weightage and section-E carries 3 case-based with total weightage of 12 marks.
3. Section- A comprises 18 MCQ's and 02 Assertion Reason based questions of 1 mark each.
4. Section- B comprises 5 VSA type questions of 2 marks each.
5. Section- C comprises 6 SA type of questions of 3 marks each
6. Section- D comprises 4 LA type of questions of 5 marks each.
7. SECTION-E It has 3 case studies. Each case study comprises 3 case-based questions, where 2 VSA type questions are of 1 mark each and 1 SA type question is of 2 marks. Internal choice is provided in 2 marks question in each case-study.
8. Internal choice is provided in 2 questions in section- B, 2 questions in section- C, 2 questions in section-D. You have to attempt only one of the alternatives in all such questions.

SECTION A

1. The last (unit) digit of $(22)^{12}$
   (a) 2 (b) 4 (c) 6 (d) 8

2. The least non-negative remainder, when 3^{15} is divided by 7 is
   (a) 1 (b) 5 (c) 6 (d) 7

3. Which of the following is a statistic?
   (a) μ (b) $\bar{x}$ (c) σ^2 (d) none of these

4. In one sample t-test, the estimation for population mean is
   (a) $\frac{\bar{x}-\mu}{\frac{S}{\sqrt{n}}}$ (b) $\frac{\bar{x}-\mu}{\frac{S}{n}}$ (c) $\frac{\bar{x}-\mu}{\frac{S^2}{n}}$ (d) $\frac{\overline{x_1}-\overline{x_2}}{\frac{S}{\sqrt{n}}}$

5. If random variable X represents the number of heads when a coin is tossed twice, then mathematical expectation of X is
   (a) 0 (b) ¼ (c) ½ (d) 1

6. If the cash equivalent of a perpetuity of ₹ 300 payable at the end of each quarter is ₹ 24000, then rate of interest compounded quarterly is
   (a) 5% (b) 4% (c) 3% (d) 2%

7. $\int \frac{\log x}{x} dx$ equals
   (a) $-\frac{\log x}{2} + C$ (b) $\frac{(\log x)^2}{2} + C$ (c) $\frac{\log x}{2} + C$ (d) log(log x) + C

8. The supply of finished goods was delayed for a month due to landslide in hilly terrain. Under which trend oscillation does this situation fall?
   (a) Seasonal (b) Cyclical (c) Secular (d) Irregular

9. A machine costing ₹ 30000 is expected to have a useful life of 4 years and a final scrap value of ₹ 4000. The annual depreciation is
   (a) 5500 (b) 6500 (c) 7500 (d) 8500

10. The effective rate of interest equivalent to the nominal rate 6% compounded semi-annually is
    (a) 6.05% (b) 6.07% (c) 6.09% (d) 6.1%

11. If the invest of ₹ 20000 in the mutual fund in 2015 increased to ₹ 32000 in the year 2020, then CAGR (Compound Annual Growth Rate) is [given $(1.6)^{\frac{1}{5}} = 1.098$]
    (a) 9.08% (b) 9.8% (c) 0.098 (d) 0.09

12. The integrating factor of the differential equation $x\frac{dy}{dx} + 3y = x^4 (x \neq 0)$ is
    (a) log x (b) x^2 (c) x^3 (d) none of these

13. What is the LPP shaded region known as?
    (a) Feasible solution (b) Objective region (c) Feasible region (d) Infeasible region

14. If X is a poisson variate such that 3P(X=2) = 2P(X=1), then the mean of the distribution is equal to
    (a) $\frac{4}{3}$ (b) $\frac{3}{4}$ (c) $-\frac{4}{3}$ (d) $-\frac{3}{4}$

Contd...2

15. For the given 5 values 35, 70, 36, 59, 64 the three years moving averages are given by
(a) 47,53,55 (b) 53, 47, 45 (c) 47, 55, 53 (d) 45, 55, 57

16. The data point of a normal variate with mean 12, standard deviation 4 and z-score 5 is
(a) 28 (b) 304 (c) 34 (d) 32

17. The ratio in which a grocer mixes two varieties of pulses costing ₹ 85 per Kg and ₹ 100 per Kg respectively so as to get a mixture worth ₹ 92 per Kg is:
(a) 7: 8 (b) 8: 7 (c) 5: 7 (d) 7: 5

18. The length of a rectangle is double the breadth. If the minimum perimeter of the rectangle is 120 cm, then
(a) breadth > 20 cm (b) breadth < 20 cm (c) breadth $\geq$ 20 *cm* (d) breadth $\leq$ 20 cm

For questions 19 and 20, two statements are given – one labeled Assertion (A) and the other labeled Reason (R), select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:
(i) Both A and R are true and R is the correct explanation of the assertion
(ii) Both A and R are true and R is not the correct explanation of the assertion
(iii) A is true, but R is false
(iv) A is false, but R is true

19. **Assertion (A) :** The maximum profit that a company makes if profit function is given by $P(x) = 41 + 24x - 8x^2$, where x is the number of units and P is the profit is 59.
Reason (R) : The profit is maximum at x = a if P'(a) = 0 and P''(a) > 0.
(a) (i) (b) (ii) (c) (iii) (d) (iv)

20. **Assertion (A):** The probability of getting 7 heads when an unbiased coin is tossed 15 times is
$C(15, 7)\left(\frac{1}{2}\right)^{15}$
Reason (R) : In a binomial distribution, the probability is given by $P(X= r) = C(n, r)(p)^r (q)^{n-r}$
(a) (i) (b) (ii) (c) (iii) (d) (iv)

SECTION B

(All questions are compulsory, in case of internal choice, attempt any one question only)

21. At what rate of interest will the present value of perpetuity of ₹ 1500 payable at the end of every 6 months be ₹ 20000?

22. A cooperative society of farmers has 10 hectares of land to grow two crops A and B. To control weeds, pesticides have to be used for crops A and B at the rate of 30 grams per hectare and 15 grams per hectares respectively. Further, not more than 750 grams of pesticide should be used. The profit from crops A and B per hectare are estimated as ₹ 8000 and ₹ 9500. Formulate the above problem as LPP, in order to allocate land to each crop for maximum total profit.

23. If A is a square matrix $\begin{bmatrix} 2 & -2 \\ -2 & 2 \end{bmatrix}$ such that $A^2 = pA$, then find the value of p.

OR

Find the value of 3a – 2b + c, if $A = \begin{bmatrix} 0 & a & 3 \\ 2 & b & -1 \\ c & 1 & 0 \end{bmatrix}$ is a skew symmetric matrix.

24. A man rows 15 km upstream and 25 km downstream each in 5 hours. Find the speed of the stream.

OR

A can run 40 metres while B runs 50 metres in the same time. In a 1000 m race, find by how much distance B beats A.

25. A machine produces washers of thickness 0.50 mm. To determine whether the machine is in proper working order, a sample of 10 washers is chosen for which the mean thickness is 0.53 mm and the standard deviation is 0.03 mm. Test the hypothesis at 5% level of significance that the machine is working in proper order. [Given $t_{9(0.05)} = 2.262$]

SECTION C

(All questions are compulsory, in case of internal choice, attempt any one question only)

26. Find the interval(s) in which the function $f(x) = 2x^3 - 9x^2 + 12x - 5$, is increasing and decreasing.

Contd...3

27. Income of two toys A and B are Rs 50 and Rs 75. On a particular Monday shopkeeper P sells 7 toys of type A and 10 toys of type B whereas shopkeeper Q sells 8 toys of type A and 6 toys of type B. Find income of both shopkeepers using matrix algebra.

28. Evaluate $\int \frac{x^3}{x+2} dx$

OR

Evaluate $\int (x^2 + 1) \log x \, dx$

29. The demand and supply functions under the pure market competition are $p_d = 16 - x^2$ and $p_s = 2x^2 + 4$ respectively, where p is the price and x is the quantity of the commodity. Using integrals, find the consumer's surplus.

OR

The demand and supply functions under the pure market competition are $p_d = 56 - x^2$ and $p_s = 8 + \frac{x^2}{3}$ respectively, where p is the price and x is the quantity of the commodity. Using integrals, find the producer's surplus.

30. Mr. Sam borrowed a sum of ₹ 500000 with total interest to be paid ₹ 200000 (flat) and he is paying an EMI of ₹ 12500. Calculate loan tenure.

31. Mr. Shyam wants to send his daughter abroad for higher studies after 10 years. He sets up a sinking fund in order to have Rs 500000 after 10 years. How much should he set aside semi-annually into an account paying 5% per annum compounded annually. [Use $(1.025)^{20} = 1.6386$]

SECTION D

(All questions are compulsory, in case of internal choice, attempt any one question only)

32. On doing the proof reading of a book on an average 4 errors in 10 pages were detected. Using Poisson's distribution, find the probability of (i) no error and (ii) one error in 1000 pages of first printed edition of the book. (Given $e^{-0.4} = 0.6703$)

OR

How many times Grover toss a fair coin so that the probability of getting at least one head is more than 90%?

33. A company produces a certain commodity with Rs 24000 fixed cost. The variable cost is estimated to be 25% of the total revenue received on selling the product at the rate of Rs 8 per unit. Find the following:

(i) Cost function (ii) Revenue function
(iii) Breakeven point (iv) Profit function

OR

The production manager of a company plans to include 180 sq. cm of actual printed matter in each page of a book under production. Each page should have a 2.5 cm wide margin along the top and bottom and 2 cm wide margin along the sides. What are the most economical dimensions of each printed page?

34. The management committee of a Welfare Club decided to award some of its members (say x) for sincerity, some (say y) for helping others selflessly and some others (say z) for effective management. The sum of all the awardees is 12. Three times the sum of all awardees for helping others selflessly and effective management added to two times the number of awardees for sincerity is 33. If the sum of the number of awardees for sincerity and effective management is twice the number of awardees for helping others, use matrix method to find the number of awardees of each category.

35. A manufacturer has three machines I, II and III installed in his factory. Machines I and II are capable of being operated for at most 12 hours whereas machine III must be operated for at least 5 hours a day. He produces only two items M and N each requiring the use of all the three machines. The number of hours required for producing 1 unit of M and N on three machines are given in the following table:

Items	Number of hours required on machine		
	I	II	III
M	1	2	1
N	2	1	1.25

He makes a profit of ₹ 600 and ₹ 400 on one unit of items M and N respectively. Formulate the above problem as LPP and solve it graphically to find how many units of each item be produced to maximize his profit. Also find the maximum profit.

Contd...4

SECTION E

(All questions are compulsory, in case of internal choice, attempt any one question only)

36. **Case study – 1**

A, B and C are three pipes connected to a tank. A and B together fill the tank in 6 hours. B and C together fill the tank in 10 hours. A and C together fill the tank in $7\frac{1}{2}$ hours. Based on the above information answer the following questions:

(i) In how much time will A, B and C fill the tank?
(ii) In how much time will A separately fill the tank?
(iii) In how much time will B separately fill the tank?

OR

(iii) In how much time will C separately fill the tank?

37. **CASE STUDY – 2**

Let X denote the number of hours a person watches television during a randomly selected day. The probability that X can take the values x_i has the following form, where k is some unknown constant

$$P(X = x) = \begin{cases} 0.2, if\ x_i = 0 \\ kx_i, if\ x_i = 1\ or\ 2 \\ k(5 - x_i), if\ x_i = 3 \\ 0, otherwise \end{cases}$$

(i) Find the value of k
(ii) What is the probability that a person watches 2 hours of television on a selected day?
(iii) What is the probability that a person watches at least 2 hours of television on a selected day?

OR

(iii) What is the probability that a person watches at most 2 hours of television on a selected day?

38. **CASE STUDY-3**

When observed over a long period of time, a time series data can predict trend that can forecast increase or decrease or stagnation of a variable under consideration. Such analytic studies can benefit a business for forecasting or prediction of future estimated sales of productions.

The table below shows the welfare expenses (in lakhs) of steel industry during 2001 – 2005. Fit a straight line trend by the method of least squares and estimate trend for the year 2008

Year	**2001**	**2002**	**2003**	**2004**	**2005**
Welfare expenses	160	185	220	300	510

OR

The annual rainfall in mm was recorded in Cherapunji, Meghalaya:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Rainfall (in mm)	1.2	1.9	2	1.4	2.1	1.3	1.8	1.1	1.3

Determine the trend of rainfall by three years moving average and draw the moving averages graph.

DELHI PUBLIC SCHOOL, BHILAI

DATE : 13.12.2023 **PREBOARD EXAMINATION 2023-'24** **Time : 3 Hrs.**

CLASS : XII **SUBJECT – PHYSICS** **Max. Marks : 70**

General Instructions :

(1) There are 33 questions in all. All questions are compulsory.
(2) This question paper has five sections : Section A, Section B, Section C, Section D and Section E.
(3) All the sections are compulsory.
(4) **Section A** contains sixteen questions, twelve MCQs and four Assertion and Reasoning based of 1 mark each. **Section B** contains five questions of two marks each, **Section C** contains seven questions of three marks each, **Section D** contains two case study based questions of four marks each and Section E contains three long answer questions of five marks each.
(5) There is no overall choice. However, an internal choice has been provided in one question in Section B, one question in Section C, one question in each CBQ in Section D and all three question in Section E. You have to attempt only one of the choices in such questions.
(6) Use of calculator is not allowed.
(7) You may use the following values of physical constants wherever necessary.
   i. $c = 3 \times 10^8 m/s$
   ii. $m_e = 9.1 \times 10^{-31} kg$
   iii. $e = 1.6 \times 10^{-19} C$
   iv. $\mu_0 = 4\pi \times 10^{-4}\ TmA^{-1}$
   v. $h = 6.63 \times 10^{-34} JS$
   vi. $\varepsilon_0 = 8.854 \times 10^{-12} C^2 N^{-1} m^{-2}$

Section – A

1. A hollow metallic surface of radius 5 cm is charged. So that the potential on its surface is 10 V . The potential at a distance of 2 cm from centre of the sphere is, (1)
   (a) 0 V (b) 4 V (c) 10 V (d) $\frac{10}{3}$ V

2. The flux of electric field due to these charges through the Surface 'S' is (1)

   (a) $\frac{3q}{\varepsilon o}$ (b) zero (c) $\frac{2q}{\varepsilon o}$ (d) $\frac{q}{\varepsilon o}$

3. The strength of the magnetic field at a distance 'r' near a long straight conductor carrying current I is B. The field at the distance $r/2$ will be : (1)
   (a) 2B (b) $B/2$ (c) 4B (d) $B/4$

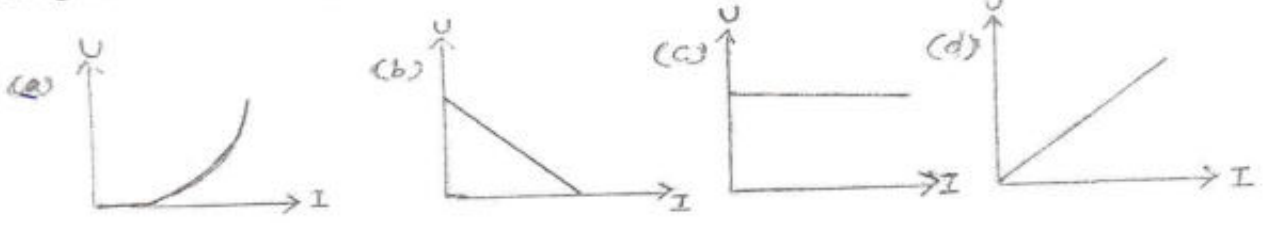
4. To convert a galvanometer in to voltmeter, we must connect a,
   (a) Low resistance in series. (b) High resistance in parallel.
   (c) Low resistance in parallel. (d) High resistance in series. (1)

5. A circular coil of 20 turns and radius 10 cm is placed in uniform magnetic field of 10 T, normal to be plane of the coil. If the current in the coil is 5 A, then the torque acting on the coil will be, (1)
   (a) 31.4 Nm (b) 3.14 Nm (c) 0.314 Nm (d) zero

6. Unit of Magnetic dipole moment is (1)
   a) amp-m^2 (b) amp/m^2 (c) wb/m (d) wb-m^2

7. Which of the following characteristics is not associated with ferromagnetic material?
   (a) It is strongly attracted by a magnet.
   (b) Its origin is the spin of electrons.
   (c) It tends to move from a region of strong to weak magnetic field.
   (d) Above the Curie temperature, it exhibits Paramagnetic Property. (1)

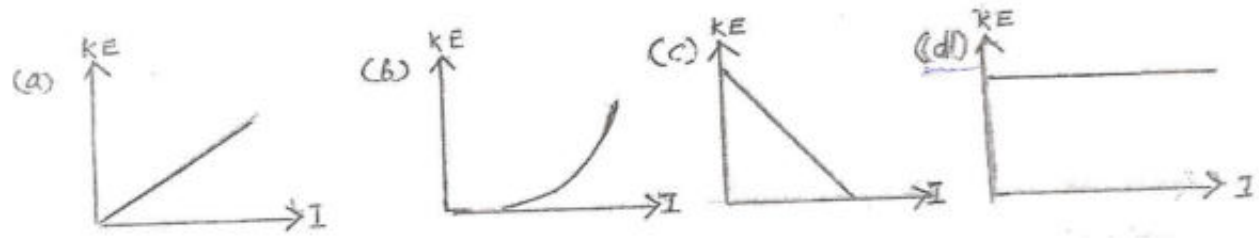
8. The current flowing through an inductor of Self Inductance L is continuously increasing. The graph depicting the variation of magnetic potential energy stored with current is, (1)



9. Which of the following relation is correct? (1)
   (a) $\sqrt{\varepsilon_o E_o} = \sqrt{\mu_o B_o}$ (b) $\sqrt{\mu_o \varepsilon_0} = \frac{B_o}{E_o}$ (c) $E_o = \sqrt{\mu_o \varepsilon_o B_o}$ (d) $\sqrt{\mu_o E_o} = \sqrt{\varepsilon_o B_o}$

Contd...2

10. In Photoelectric effect, if the intensity of the light is doubled, then the change in maximum kinetic energy of photo electrons versus intensity (I) graph is correctly shown in (1)

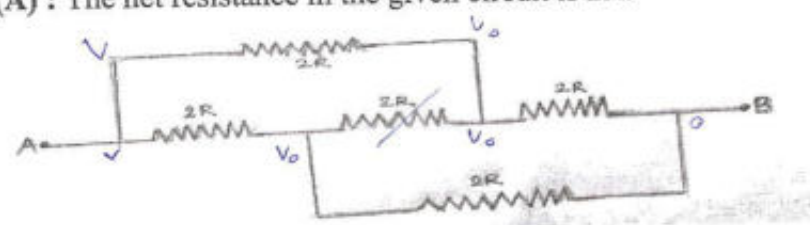


11. In Rutherford's α particle scattering experiment, what will be the correct angle of scattering for an impact parameter b=0
(a) 90° (b) 180° (c) 0° (d) 270° (1)

12. If λ_1 *and* λ_2 are the longest wavelength emitted in Lyman and paschen series respectively, then $\lambda_1 : \lambda_2$ is
(a) 1 : 3 (b) 1 : 30 (c) 7 : 108 (d) 7 : 50 (1)

For Questions 13 to 16, Two statements are given – one labelled Assertion (A) and other labelled Reason (R). Select the correct answer from the options given below :
(a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) Assertion is true but Reason is false.
(d) Both Assertion and Reason are false.

13. **Assertion (A) :** The net resistance in the given circuit is 2R.



Reason (R) : The resistors are in parallel. (1)

14. **Assertion (A) :** The photo electrons produced by a monochromatic light beam incident on a metal surface have different value of kinetic energy.
Reason (R) : The work function of the metal is its characteristic property. (1)

15. **Assertion (A) :** Conductivity of a semiconductor increases with increase of temperature.
Reason (R) : With increase of temperature, the energy gap between valance band and conduction band decreases. (1)

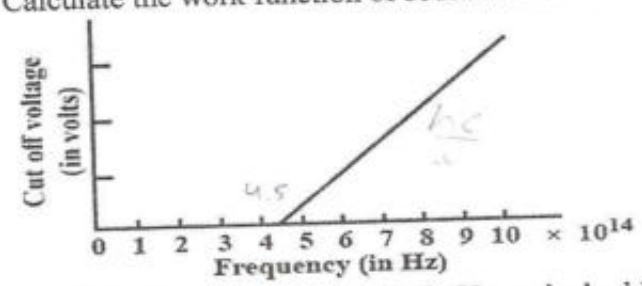
16. **Assertion (A) :** Critical angle of light passing from glass to air is minimum for violet colour.
Reason (R) : The wavelength of violet light is greater than the light of other colours. (1)

Section – B

17. Two conducting wires X and Y of same diameter but different materials are joined in series across a battery. The number density of electron in X is twice that in Y. Find the ratio of drift velocity of electrons in two wires. (2)

18. What is a rectifier? Draw a neat circuit diagram of a full wave rectifier. Draw the input and output wave forms. (2)

19. The figure shows the plot of cutoff voltage versus frequency of incident radiation for a photo electric effect in sodium. Calculate the work function of sodium in eV. (2)



20. How will the fringe width of interference pattern in Young's double slit experiment get affected, when
(i) distance between the slits S_1 and S_2 reduced.
(ii) The entire set up is immersed in water. Justify your answer in each case. (2)

OR

Draw a neat labeled diagram of image formation by a compound microscope in near point adjustment. Write the formula for magnification in this adjustment.

21. Define total internal reflection. Find the relation between critical angle and refractive index of the media.(2)

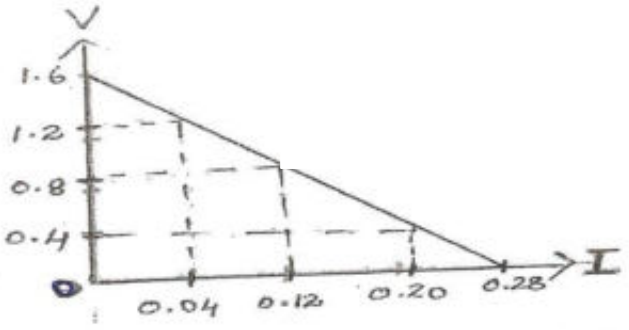
Contd...3

Section – C

22. Identify the part of electromagnetic spectrum which
    (i) is used in RADAR systems for aircraft navigation.
    (ii) is used in water purifiers to kill germs and bacterias.
    (iii) is used in earth Satellites to observe growth of crops. (3)

23. Define nuclear Binding Energy. Plot a graph between binding energy per nucleon and mass number. Write down any two conclusions drawn from this graph. (3)

24. The potential difference across terminal of a cell were measured (in volt) against current (in ampere) flowing through the cell.
    A graph was drawn which was a straight line as shown below :



    Determine from the graph :
    (i) emf of the cell.
    (ii) Maximum current obtained from the cell.
    (iii) Internal resistance of the cell. (3)

25. Using Gauss's Law deduce the expression for the electric field due to uniformly charged spherical conducting shell of radius R at a Point (i) outside and (ii) inside the shell. Plot a graph showing variation of electric field as a function of $r > R$ and $r < R$ (r being the distance from the centre of the shell). (3)

26. (a) Define self inductance. Write its SI unit.
    (a) Write the expression for self inductance of long solenoid of length l having 'N' turns.
    (b) If the rate of change of current of $2AS^{-1}$ induces an e.m.f. of 10 mV in a solenoid, what is the self inductance of the solenoid? (3)

OR

    (a) Write the principle of transformer.
    (b) Define transformer ratio.
    (c) A power transmission lines feeds input power at 2300 V to a step down transformer having 4000 turns in its primary. What should be the number of turns in the secondary to get the output power at 230 V?

27. A circular coil of 20 turns and radius 10 cm is placed in a uniform magnetic field of 0.10 T normal to the plane of the coil. If the current in the coil is 5.0 A, what is the
    (a) total torque on the coil?
    (b) total force on the coil?
    (c) average force on each electron in the coil due to magnetic field? (the coil is of copper with area $10^{-5}m^2$ and free electron density $10^{29}m^{-3}$). (3)

28. Using Bohr's postulates derive an expression for radius of n^{th} orbit of electron in Hydrogen atom. (3)

Section – D

Case Study Based Questions : **(1x4=4)**

29. **Read the following paragraph and answer the questions that follow :**

Refraction involves change in the path of light due to change in the medium. When a beam of light encounters another transparent medium a part of light gets reflected back in to first medium, while the rest enters the other. The direction of propagation of an obliquely incident ray of light, that enters the other medium, changes at the interface of two media. This phenomenon is called refraction of light.

(i) Which quantity of incident light remains unchanged after refraction?
    (a) wavelength (b) frequency (c) intensity (d) amplitude

(ii) A ray of light strikes an air-glass interface. On increasing the value of angle of incidence i, the angle of refraction r will
    (a) Also increase (b) decrease (c) remain unchanged (d) None of the above

(iii) For same angle of incidence, the angle of refraction in media P, Q and R are $35°$, $25°$ and $15°$ respectively. If V_P, V_Q and V_R are the speed of light in medium P, Q and R, then :
    (a) $V_P = V_Q = V_R$ (b) $V_P = V_Q > V_R$
    (c) $V_P > V_Q > V_R$ (d) $V_P = V_Q < V_R$

OR

A small ink dot on a paper is seen through a glass slab of thickness 4 cm and refractive index 1.5. The dot appears to be raised by
    (a) 1 cm (b) 2 cm (c) 3 cm (d) 1.33 cm

(iv) To a fish under water, viewing obliquely a fisherman standing on the bank of a lake, the man looks
    (a) taller than what he actually is (b) shorter than what he actually is
    (c) the same height as he actually is (d) depends on the obliquity

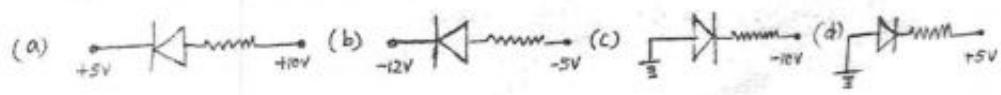
Contd...4

30. **Read the following paragraph and answer the questions that follow :** **(1x4=4)**

Semiconductors are the substances having resistivity or conductivity between metals and insulators. Germanium and silicon are the widely used elemental semiconductors. As the intrinsic semiconductors have low conductivity, the conductivity can be considerably increased by the method of doping. By adding desirable impurities we can obtain P and N type extrinsic Semiconductor. Two independent P type and N type Semiconductor slabs joined end to end can not form a P-N Junction. A single piece of semiconductor material with one portion doped with pentavalent impurity and other portion doped with trivalent impurity behaves as a P-N Junction diode.

(i) Electric conduction in a semiconductor takes place due to
(a) electrons only. (b) holes only. (c) both electrons and holes. (d) neither electrons nor holes.

(ii) Which of the following indicate the reverse biasing of diode?



(iii) Which of the following statement is not true?
(a) A P-N junction can act as a semi conductors diode.
(b) Majority carriers in N type semi conductors are holes.
(c) doping pure silicon with trivalent impurities give P type semi conductor.
(d) The resistance of intrinsic semi conductors decreases with increase of temperature.

OR

In an N type silicon which of the following statement is true?
(a) Electrons are majority carriers and trivalent impurities are dopants.
(b) Electrons are minority carriers and pentavalent atoms are the dopants.
(c) Holes are minority carriers and Pentavalent atoms are the dopants.
(d) Holes are majority carriers and trivalent atoms are the dopants.

(iv) The energy band gap of carbon $(Eg)_c$, silicon $(Eg)_{si}$ and germanium $(Eg)_{Ge}$ are compared. Which of the following statement is true?
(a) $(Eg)_{si} < (Eg)_{Ge} < (Eg)_c$ (b) $(Eg)_c < (Eg)_{Ge} > (Eg)_{si}$
(c) $(Eg)_c = (Eg)_{si} = (Eg)_{Ge}$ (d) $(Eg)_c > (Eg)_{si} > (Eg)_{Ge}$

Section – E

31 (i) Define capacitance of a capacitor. Write its SI unit.
(ii) A dielectric slab of thickness 't' is kept between the plates of a parallel plate capacitor with plate separation d (t<d). Derive the expression for the capacitance.
(iii) A capacitor of capacitance is charged fully by connecting it to a battery of emf E. It is then disconnected from the battery. If the separation between the plates of the capacitor is now doubled what will happen to (a) capacitance of the capacitor? (b) Potential difference across it? (5)

OR

(i) Define Electric dipole moment. Write its SI unit.
(ii) Derive an expression for potential energy of a dipole system placed in a uniform Electric field.
(iii) Show diagrammatically the (a) stable and (b) unstable equilibrium of the dipole system placed in uniform electric field.

32. A device X is connected across an AC source of voltage V=Vo sinωt. The current through X is given as $I = Io \sin(\omega t + \frac{\pi}{2})$.
(a) Identify the device X.
(b) Draw a graph showing variation of voltage and current with time over one cycle of AC.
(c) Write the expression for reactance. What is the value of reactance when the device X is connected to dc?
(d) Show the variation of reactance with frequence graphically.
(e) Draw the phasor diagram for the device X. (5)

OR

(a) When is the current in a.c. circuit wattles?
(b) In an ac circuit $R = 4\Omega$, $z = 5\,\Omega$ $V_{rms} = 200\,V$ and $I_{rms} = 1.5\,A$.
Calculate the average power consumed over a full cycle.
(c) The power factor of an a.c. circuit is 0.5. What will be Phase difference between voltage and current in this circuit.
(d) Write the expression for power factor in LCR circuit in terms of resistance and reactance.
(e) What is the value of power factor at resonance in LCR circuit?

33 (i) With the help of neat ray diagram, derive lens maker's formula for a Convex lens.
(ii) A converging lens has a focal length of 10 cm in air, It is made of a material of refractive index 1.6. If it is immersed in a liquid of refractive index 1.3, find its new focal length? (5)

OR

(i) Define wave front. Using Huygens construction of secondary wavelets, draw a diagram showing the passage of a plane wave front from rarer to a denser medium. Using it verity Snell's Law.
(ii) Write two differences between interference pattern and diffraction pattern.

DELHI PUBLIC SCHOOL, BHILAI

DATE : 08.12.2023 **PREBOARD EXAMINATION 2023-'24** **Time : 3 Hrs.**

CLASS : XII **SUBJECT – CHEMISTRY** **Max. Marks : 70**

General Instructions :

(a) There are 33 questions in this question paper with internal choice.
(b) **Section A** consists of 16 multiple-choice questions carrying 1 mark each.
(c) **Section B** consists of 5 short answer questions carrying 2 marks each.
(d) **Section C** consists of 7 short answer questions carrying 3 marks each.
(e) **Section D** consists of 2 Case-based questions carrying 4 marks each.
(f) **Section E** consists of 3 Long Answer questions carrying 5 marks each.
(g) All questions are compulsory.
(h) Use of log tables and calculators is not allowed.

Section A

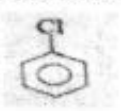
The following questions are multiple choice questions with one correct answer. Each question carries 1 mark. There is no internal choice in this section.

1. The positive value of the standard electrode potential of Cu^{2+}/cu indicate that
   (a) this redox couple is strong oxidizing agent than H^+/H_2
   (b) this redox couple is strong reducing agent than H^+/H_2
   (c) Cu can displace H_2 from acid
   (d) It has high tendency to undergo oxidation

2. For the reaction $3A \rightarrow 2B$, rate of reaction in terms of A is equal to
   (a) $-3/2 \ \frac{d[A]}{dt}$ (b) $-2/3 \ \frac{d[A]}{dt}$ (c) $-1/3 \ \frac{d[A]}{dt}$ (d) $\frac{+2\,d[A]}{dt}$

3. Which of the following is diamagnetic ion? [At No. Sc = 21 , V=23 , Mn = 25 , Cu=29]
   (a) V^{2+} (b) Sc^{3+} (c) Cu^{2+} (d) Mn^{3+}

4. The synthesis of alkyl fluoride is best obtained from
   (a) free radicals (b) Sandmeyer's reaction
   (c) Finkelstein reaction (d) Swarts reaction

5. Which of the following will not yield phenol?
   (a)  $\xrightarrow[(ii)\ H_2O\ /\ H^+]{(i)\ fusion\ with\ NaOH\ at\ 300\ K}$
   (b)  $\xrightarrow[(ii)\ H_2O\ /\ warm]{(i)\ \ NaNO_2\ /\ HCl}$
   (c)  $\xrightarrow[(ii)\ NaOH\ (heating)\ \ (iii)\ H^+]{(i)\ \ Oleum}$
   (d)  $\xrightarrow{Li\ Al\ H_4}$

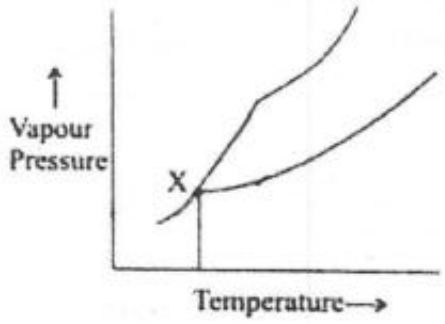
6. $CH_3C \equiv CH \xrightarrow[1\%\ Hg\ SO_4]{40\%\ H_2SO_4} A \xrightarrow{Isomerisation} \underset{CH_3 - C - CH_3}{\overset{O}{\parallel}}$ Structure of A and type of Isomerisation in the above reaction are respectively-
   (a) $Prop-1-en-2-ol$; tautomerism
   (b) $Prop-1-en-2-ol$; metamerism
   (c) $Prop-1-en-1-ol$; tautomerism
   (d) $Prop-2-en-2-ol$; Geometrical Isomerism

7. The best reagent for converting 2 – phenyl propanamide in to 2 – phenyl propanamine is –
   (a) $KMnO_4/H_2SO_4$ (b) Br_2 in aq NaOH
   (c) Li Al H_4 (d) I_2 in presence of Red Phosphorus

8. An $\propto$ - helix is the structural feature of
   (a) Polypetetides (b) Sucrose (c) Nucleotides (d) Starch

Contd...2

9. In the following diagram, 'X' represents



(a) freezing point of solvent
(b) boiling point of solution
(c) Freezing point of solution
(d) boiling point of solvent

10. If 75% of the first order reaction was completed in 32 minutes 50% of the same would be completed in
(a) 16 min (b) 8 min (c) 4 min (d) 24 min

11. Which of the following is the reason for Zn not exhibiting variable oxidation state?
(a) Inert pair effect (b) Completely filled d – orbitals
(c) Completely filled 4s subshell (d) Partially filled d-orbitals

12. Mono chlorination of toluene in sunlight followed by hydrolysis with aq NaOH yields
(a) o – Cresol (b) m – Cresol
(c) 2, 4 dihydroxy toluene (d) Benzyl alcohol

In the question 13 to 16 two statements are given. One labelled as Assertion (A) and other labelled as Reason (R). Select the most appropriate answer from the options given below :

(a) Both (A) and (R) are true and (R) is the correct explanation of (A).
(b) Both (A) and (R) are true and (R) is not the correct explanation of (A).
(c) (A) is true but (R) is false.
(d) (A) is false but (R) is true.

13. **Assertion (A) :** A carboxalate ion (CH_3COO^-) is stablised by resonance to greater extent as compare to acid (RCOOH) .
Reason (R) : The contributing structure of $RCOO^-$ are equivalent while those of RCOOH are not.

14. **Assertion (A) :** Vitamin C cannot be stored in our body.
Reason (R) : Vitamin C is fat soluble and is excreted through urine.

15. **Assertion (A) :** o – nitrophenol is weak acid than p-nitro phenol.
Reason (R) : Intramolecular hydrogen bonding makes ortho isomer a weaker acid than para Isomer.

16. **Assertion (A) :** Aldehyde and ketones, both react with Tollen's reagent to form silver mirror.
Reason (R) : Both aldehyde and ketones contain a carbonyl group.

Section B

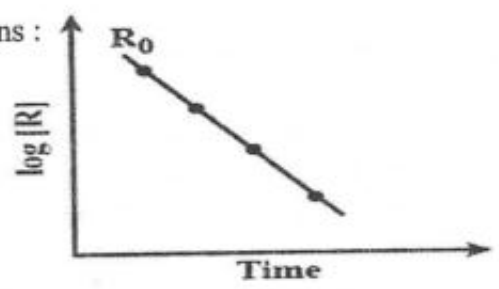
(This section contains 5 questions with internal choice in one question.
The following questions are very short answer type and carry 2 marks each)

17. For 5% solution of urea (Molarmass 60 g/mol) , calculate osmatic pressure at 300 K.

18. For a reaction the energy of activation (Ea) is zero.
What is the value of rate constant at 300 K,
if rate constant at 280 K is $1.6 \times 10^6 s^{-1}$ ($R = 8.314\, JK^{-1}\, mol^{-1}$)

OR

Observe the graph in diagram and answer the following questions :
(a) If slope is equal to $-2.0 \times 10^{-6}\, s^{-1}$, what will be the value of rate constant?
(b) How rate constant is related half life period?



19. Out of chlorobenzene and benzyl chloride, which one get hydrolysed by aqueous NaOH and why?

20. (a) Write the IUPAC name of $(CH_3CH_2)_2\, N\, CH_3$.
(b) Give one test to distinguish between methyl amine and Aniline.

21. (a) What type of linkage is present in nucleic acids?
(b) Give one example each for fibrous protein and globular protein.

Contd...3

Section C

(This section contains 7 questions with internal choice in one question. The following questions are short answer type and carry 3 marks each.)

22. An electrochemical cell is constructed by dipping. Nickel rode in 0.1M solution of $Ni(NO_3)_2$ and Silver rode in 1M Ag NO_3 solution with salt bridge connected.
(a) Write the balanced equation for the overall reaction occurring in the cell. (1)
(b) Calculate the EMF of the cell at $25°C$
if $E^0Ni^{2+}/Ni = -0.25\ V$ and $E^0Ag^{+}/Ag = 0.80V$ (2)

23. Rate constant K for a first order reaction has been found to be $2.54 \times 10^{-3}\ S^{-1}$
(a) Calculate t ½ and t ¼ . (2)
(b) How t ½ and t ¼ are related each other ? (1)

24. Name the following co-ordination entitles and describe their hybridization. [At.No. Fe=26, Ni=28] (1x3=3)

(a) $[Fe(CN)_6]^{4-}$ (b) $[Fe(H_2O)_6]^{2+}$ (c) $[Ni(CO)_4]$

OR

(a) What type of isomerism is shown by the complex $[Co\ (NH_3)_5(SCN)]^{2+}$? (1)
(b) Why $[NiCl_4]^{2-}$ is paramagnetic while $[Ni(CN)_4]^{2-}$ is diamagnetic. Explain using V.B. theory. (2)

25. Give reasons : (1x3=3)
(a) Thonyl chloride method is preferred for preparing alkyl chloride from alcohol.
(b) p-nitro chlorobenzene undergoes nucleophilic substitution faster than chlorobenzene.
(c) SN' reaction accompanied by racemization in optically active alkyl halides.

26. Write the main product(s) in each of the following reactions : (1x3=3)

(i) $CH_3-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-O-CH_3 + HI \rightarrow$

(ii) $CH_3-CH=CH_2 \xrightarrow[(ii)\ 3H_2O_2/OH^-]{(i)\ B_2H_6}$

(iii) $C_6H_5OH \xrightarrow[(ii)\ CO_2]{(i)\ aqNaOH}$

27. How will you convert the following : (1x3=3)
(a) N-phenyl ethanamide to p-bromo aniline.
(b) Benzene diazonium chloride to nitrobenzene.
(c) Benzoic acid to aniline.

28. (a) What is the difference between native protein and denatured protein? (1x3=3)
(b) Why amino acid behave like a salt in aqueous solution?
(c) Write the reactions involved when D-glucose is treated with HI.

Section D

The following questions are case-based questions. Each question has an internal choice and carries 4 (1+1+2) marks each. Read the passage carefully and answer the questions that follow.

29. The four colligative properties of the dilute solution help in calculating the molecular mass of the solute which is often called the theoretical molar mass (calculated molecular mass from formula) if solute behave normally in solution. In case, if undergoes association or dissociation, the observed molar mass gives different results. The nature of the solute in solution is expressed in terms of Van't Hoff factor (i) which may be 1 if solution behaves normally less than 1 if solute associate and more than 1 if solute dissociates.

(1) What is the Van't Hoff factor of acetic acid which under goes dimerisation in organic solvent? (1)
(2) Why molar mass of HCl will be different in aqueous solution and benzene solution? (1)
(3) (i) Write the colligative property which is used to find the molar mass of macro molecules. (1)
(ii) In non ideal solution, what type of deviation shows the formation of minimum boiling azeotropes? (1)

OR

(3) Give reasons :
(i) Cooking is faster in pressure cooker than in cooking pan. (1)
(ii) Red blood cells (RBC) shrink when placed in saline water but swell in distilled water. (1)

Contd...4

30. In co-ordination compounds, metals show two types of linkages, primary and secondary. Primary volencies are ionizable and are satisfied by negatively charged ions. Secondary valencies are non ionizable and are satisfied by neutral or negative ions having one pair of electrons. Primary valencies are non directional while secondary valencies decide the shape of the complexes.

Answer the following questions : [At.No. Sc=21, Ti=22, Cr=24, Fe=26, Co=27]

(1) If $PtCl_2.2NH_3$ does not react with $AgNO_3$, what will be its formula ? (1)

(2) What is the secondary valency of $[Co(en)_3]^{3+}$? (1)

(3) Amongst the following complex ions which one has the highest magnetic moment value?
(i) $[Cr\,(H_2O)_6]^{3+}$ (ii) $[Fe\,(H_2O)_6]^{2+}$ (2)

OR

A solution of $[Ti\,(H_2O)_6]^{2+}$ is violet but a solution of $[Sc\,(H_2O)_6]^{3+}$ is colourless. Explain. (2)

Section E

The following questions are long answer type and carry 5 marks each. Two questions have an internal choice.

31. **Attempt any five of the following :** **(1x5=5)**

(a) Depict the galvanic cell in which the cell reaction is $Cu + 2Ag^+ \rightarrow 2Ag + Cu^{2+}$

(b) In a galvanic cell the reaction $Zn(s) + 2\,Ag^+ \rightarrow Zn^{2+} + 2Ag$ takes place. Which of the electrode is negatively charge ?

(c) Why is alternating current used for measuring resistance of an electrolytic solution?

(d) How much charge is required for the reduction of $1\,mol$ of MnO_4^- to Mn^{2+} ?

(e) Value of standard electrode potential for oxidation of Cl^- ions is more positive than that of water even then in electrolysis of aqueous solution of sodium chloride, why is Cl^- oxidised at anode instead of water ?

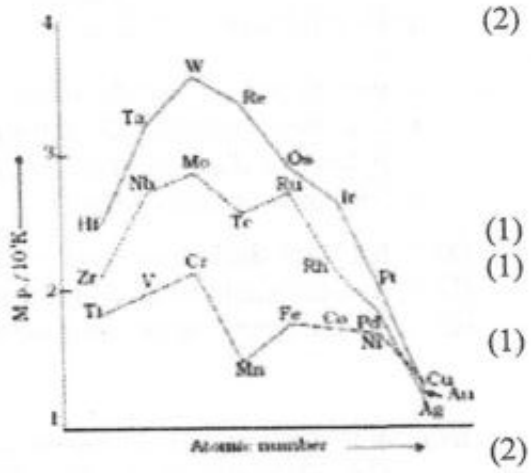
(f) Write the name of electrolytes used in (i) fuel cell (ii) mercury cell.

32 (a) Give reason : Transition elements show (2)
(i) Variable oxidation state
(ii) Catalytic properties

(b) Give the chemical reactions for the following: (3)
(i) Inter convertibility of chromate ion and dichromate ion in aqueous solution depends up on PH of the solution
(ii) Potassium permanganate is thermally unstable at $513K$.
(iii) Pyrolusite ore of potassium permanganate in to Potassium Manganate.

OR

(a) On the basis of the figure given below answer the question : (2)



(i) Why melting point of translation element increase up to middle of the series and decrease?

(ii) Why Manganese has lower melting point than chromium?

(b) (i) Complete the following reaction :
$Cr_2O_7^{2-}(aq) + Fe^{2+}(aq) + H^+(aq) \rightarrow$? (1)

(ii) Draw the structure permanganate ion . (1)

(iii) Of the d^4 *species,* Cr^{2+} is strongly reducing while Mn^{3+} is strongly oxidizing why? (1)

33. (a) Write short notes on the following: (2)
(1) Aldol condensation
(2) Sandmeyer's reaction

(b) An Alkene with molecular formula C_5H_{10} on Ozonolysis gives a mixture of two compounds B and C. Compound B gives positive Fehling test and also reacts with Iodine and NaOH solution. Compound C does not give Fehling solution test but forms Iodoform. Identity A, B and C. (3)

OR

Identify the structure of A, B, C, D and E and write the sequence of the reaction : (5)

$$C_6H_6 \xrightarrow[An\ AlCl_3]{CH_3COCl} A \xrightarrow{Zn-Hg\,/\,HCl} B \xrightarrow[(ii)\ H_3O^+]{(i)\ KMnO_4} C$$

$$A \xrightarrow{NaOI} D + E$$

DELHI PUBLIC SCHOOL, BHILAI

DATE : 06-12-2023 | **PREBOARD EXAMINATION, 2023-24** | **Time : 3 Hours**

CLASS : XII | **BIOLOGY** | **M.M : 70**

General Instructions :

1) All questions are compulsory.
2) The question paper has 5 sections and 33 questions. All questions are compulsory.
3) Section A has 16 questions of 1 mark each; Section B has 5 questions of 2 marks each; Section C has 7 questions of 3 marks each; Section D has 2 case-based questions of 4 marks each; and Section E has 3 questions of 5 marks each.
4) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
5) Wherever necessary, neat and properly labelled diagram should be drawn.

SECTION A

1) The leukocytes (WBCs) that are phagocytic and form the cellular barrier are (1)
   (a) Neutrophils and monocytes (b) macrophages and neutrophils
   (c) Monocytes and macrophages (d) eosinophils and monocytes
2) The correct sequence of the phases in logistic growth model is (1)
   (a) Log phase → phase of acceleration → phase of deceleration → asymptote
   (b) asymptote → phase of deceleration → phase of acceleration → log phase
   (c) lag phase → phase of acceleration → phase of deceleration → asymptote
   (d) lag phase → asymptote → phase of acceleration → phase of deceleration
3) Read the following statements (A–D) regarding kidney transplant and select the option with the two correct statements. (1)
   A. Even if a kidney transplant is successful, the recipient needs to take immunosuppressants for a long time.
   B. The cell-mediated immune response is responsible for graft rejection.
   C. The antibody-mediated immune response is responsible for graft rejection.
   D. The acceptance or rejection of a graft depends on the specific interferons.
   (a) A and B (b) B and C (c) B and D (d) C and D
4) The gases produced in the anaerobic sludge digester during sewage treatment include (1)
   (a) methane and carbon dioxide (b) methane, hydrogen sulphide and carbon dioxide
   (c) methane, oxygen and hydrogen sulphide (d) carbon dioxide and hydrogen sulphide
5) Organic farming involves (1)
   (a) use of biofertilisers and biopesticides (b) use of locally developed pest-resistant crop varieties
   (c) integrated pest management (d) all of these
6) When a cross was carried out between a red-flowered (dominant) and a white-flowered (recessive) snapdragon plant, the F_1 progeny plants were pink-flowered. When the F_1 progeny plants were self-pollinated and the F_2 progeny raised, there were 200 plants. What would be the number of plants with red and pink-flowers, respectively? (1)
   (a) 100 red-flowered : 100 pink-flowered (b) 50 red-flowered : 100 pink-flowered
   (c) 100 red-flowered : 50 pink-flowered (d) 50 red-flowered : 50 pink-flowered
7) The Nile perch introduced into Lake Victoria of South Africa was the cause for (1)
   (a) extinction of about 200 native species of cichlid fish
   (b) enormous multiplication of water weeds
   (c) elimination of native species of water weeds
   (d) excessive multiplication of native species of cichlid fish
8) Which of the following statements about amniocentesis is incorrect? (1)
   (a) It is used for foetal sex determination and disorders
   (b) It is carried out during early stages of pregnancy, say about 12-16 weeks of pregnancy
   (c) The chromosomal pattern in the cells obtained from the amniotic fluid forms the basis of this technique.
   (d) Because of its varied uses, this technique is not banned in the country.

9) In human females, oxytocin (1)

(a) is released by posterior pituitary
(b) causes strong uterine constractions for parturition
(c) stimulates ejection of milk from the mammary glands for lactation
(d) all of these

10) A mixtures of DNA fragments P,Q,R and S was subjected to agarose gel electrophoresis. The molecular weights of the fragments are as follows, R>S, S – P =Q, Q > P. The positions of these fragments in the gel from cathode to anode end will be (1)

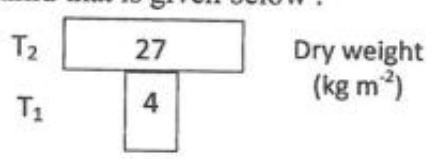
(a) P – Q – R – S (b) R – S – Q – P (c) Q – P – S – R (d) P – S – Q – R

11) Identify whether each of the following statements is true (T) or false (F) and select the correct option : (1)

A. If a double-stranded DNA contains 20% cytosine, it will have 20% guanine in it (True/False)
B. The process of translation of mRNA begins, when the mRNA encounters the large sub unit of ribosome (True/False)
C. Termination/Stop codons do not have any tRNAs. (True/False)
D. VNTR belongs to a class of satellite DNA, called micro-satellite.

(a) A – T, B – F, C – T, D – F (b) A – T, B – F, C – T, D – T
(c) A – F, B – T, C – T, D – F (d) A – F, B – F, C – T, D – T

12) Identify the type of ecological pyramid that is given below : (1)



(a) It is a pyramid of biomass in a grassland ecosystem.
(b) It is a pyramid of number in a tree ecosystem.
(c) It is a pyramid of biomass in a pond ecosystem.
(d) It is a pyramid of number in an aquatic ecosystem.

Question No. 13 to 16 consist of two statements – Assertion (A) and Reasons (R)

Answer these questions selecting the appropriate option given below :
(A) Both A and R are true and R is the correct explanation of A
(B) Both A and R are true and R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is False but R is true.

13) Assertion (A) : If the tapetum is malfunctioning in an anther, the male gametophytes often become sterile. (1)
Reason (R) : Tapetum nourishes the developing pollen grains.

14) Assertion (A) : Since the origin of life on earth, there were five episodes of mass extinction. (1)
The sixth one presently in progress is 100-1,000 times faster than those in the pre-human times.
Reason : The anthroopogeneic actions hasten the extinction process.

15) Assertion (A) : *E.coli* cell having pBR322 with a DNA insert at the BamH1 site cannot grow on a medium containing tetracycline. (1)
Reason (R) : The BamH1 site is present within the coding sequence of tet^R gene.

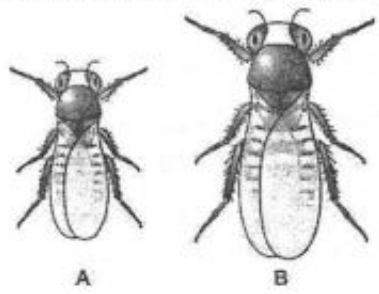
16) Assertion (A) : Genetic diversity is shown by *Rauwolfia vomittoria* growing in different Himalayan ranges. (1)
Reason (R) : The potency and the concentration of the active chemical, reserpine vary with the plants growing in different regions.

SECTION B

17) A pea plant heterozygous for flower colour and flower position is crossed with another pea plant that is homozygous recessive for both the characters (vvaa). Design a cross and mention the phenotypic and genotypic ratios in the progeny. (2)

18) Dry and scaly lesions appeared on the body of Kamal with intense itching. Doctor prescribed medicine and suggested him not to share his personal belongings with anybody. (2)
   a) Name the disease Kamal is suffering from.
   b) Mention any one genus that causes the disease and environmental factors that promote its growth.

19) Observe the diagram of the fruitflies given below and answer the questions that follow : (2)

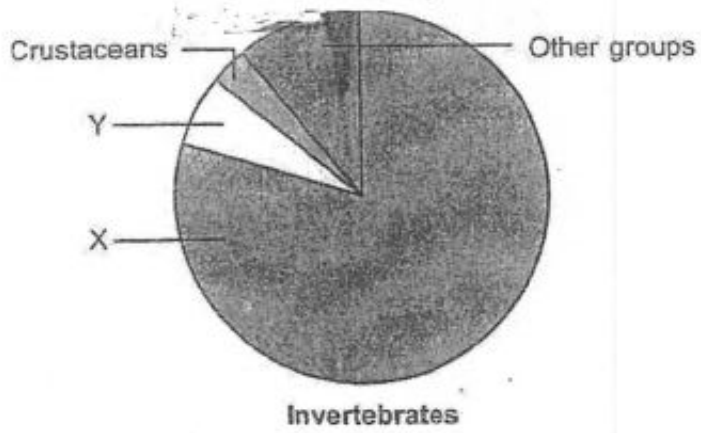


   (a) Give the (i) Scientific name of this organism and (ii) identify the male and female flies
   (b) Which one of the two is heterogametic? Justify your answer.

20) How does industrial melanism support Darwin's theory of natural selection? Explain. (2)

21) Draw a sectional view of an apple and label the different parts of an ovary in it. Fruits develop from an ovary. Then, why is apple referred to as a false fruit? (2)

(OR)



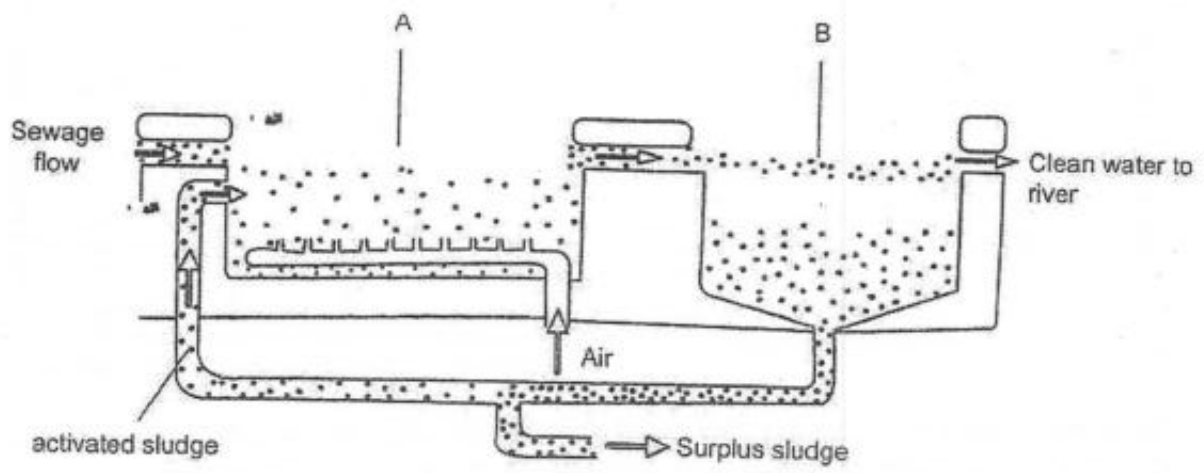
   (a) Identify 'X' and 'Y' in the given pie diagram.
   (b) Which one of the two, 'X' or 'Y' is the most species-rich taxonomic group and mention its percent of the total animals?

SECTION C

22) (a) Draw a neat labelled diagram of *lac* operon in its 'switched on' position of the *lac* operon. (3)
   (b) What does 'i' refer to in 'i' gene? When does it express? Explain how it regulates this operon.

23) (a) Who proposed an adapter molecule for the flow of genetic information? Name the molecule. (3)
   (b) (i) Why is it called an adapter molecule?
   (ii) Why is it necessary?
   (iii) What is ribozyme? Mention its function.

24) Carefully observe the image given below that illustrates secondary treatment of sewage water and answer the questions. (3)



   (a) Name the labels A and B in the diagram shown.
   (b) Why is air pumped through A? When is the effluent passed from A to B?
   (c) What is activated sludge and how is the surplus sludge further treated?

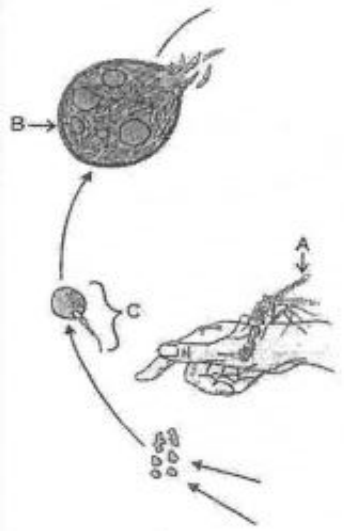
25) (a) Give two examples of defense mechanisms that prey species of animals have evolved against predators.
(b) Name the type of interaction seen in each of the following : (3)
(i) *Ascaris* worms living in the intestine of human.
(ii) Insects feeding on plant sap.
(iii) *Glomus* living on the roots of higher plants.
(iv) Clown fish living among the tentacles of sea anemone.

26) (a) Are the wings of a bird and the forelimbs of a horse homologous or analogous? Name and define the type of evolution that leads to the development of such structures. (3)
(b) According to Hardy-Weinberg principle the allele frequency of a population remains constant ($p^2+2pq+q^2 = 1$). How do you interpret the change of frequency of alleles in a population?

27) White Bengal tigers are protected in special settings in zoological parks. Tiger reserves are maintained in Western Ghats. How do these two approaches differ from each other? (3)

(OR)

Study a part of the life cycle of malarial parasite given below.



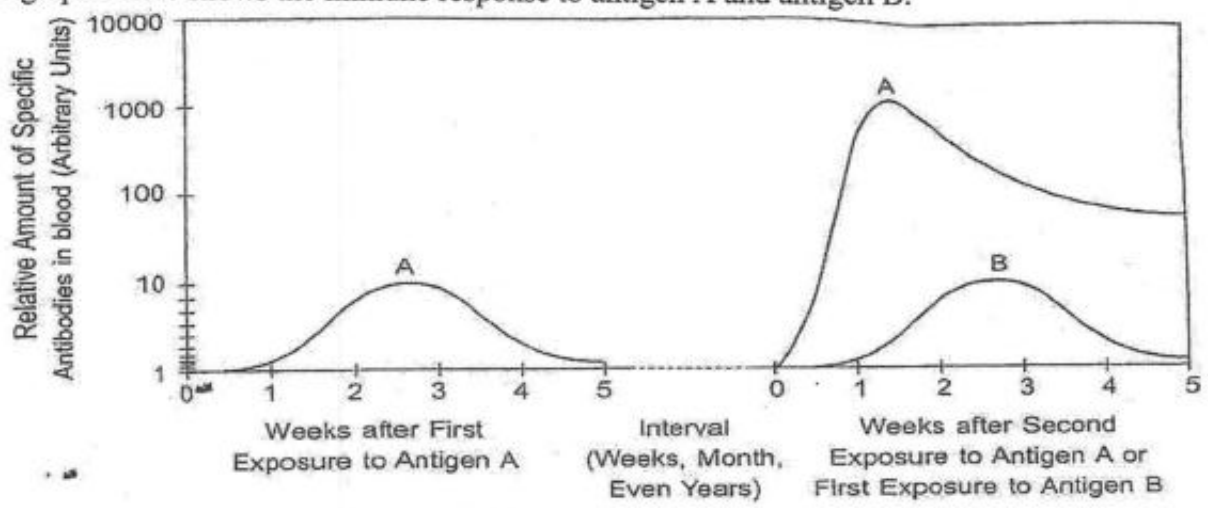
(a) Mention the roles of A in the life cycle of the malarial parasite.
(b) Name the event C and the organ where this event occurs.
(c) Identify the organ B and name the cells being released from it.

28) How do normal cells get transformed into cancerous neoplastic cells? (3)
Elaborate giving an example?

SECTION D

Question no. 29 and 30 are case based questions. Each question has subparts with internal choice in one subpart.

29) The graph below shows the immune response to antigen A and antigen B. (4)

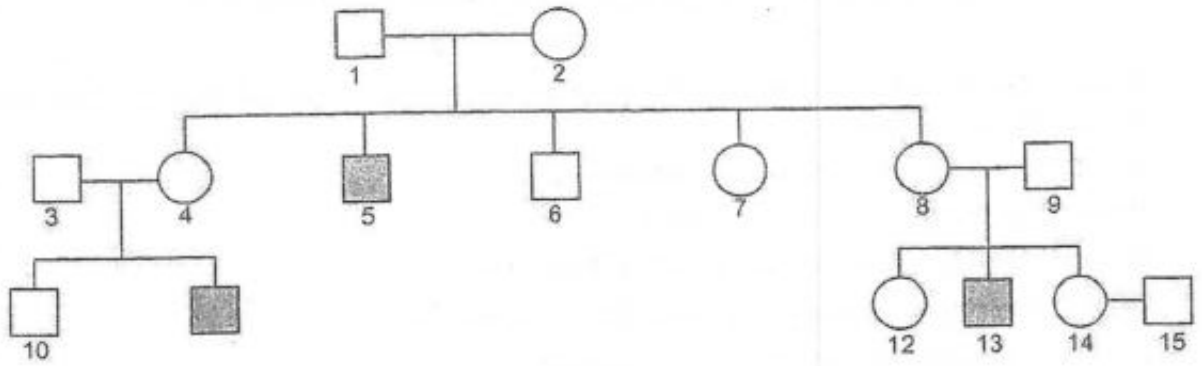


(a) Which type of immune response to antigen A and B is shown by the graph?
(b) Why does concentration of antibodies decline after about 5 weeks in first exposure to antigen A?
(c) Compare the peak concentration of antibodies during the first and second exposure to antigen A. Give reason to justify your answer.

(OR)

(c) Compare the types of immune responses shown in the graph.

30) The pedigree chart given below shows the inheritance of haemophilia in one family. Study the pattern of inheritance and answer the questions given. (4)



(a) Give all the possible genotypes of the member 4.
(b) What will be the genotype of members 5 and 6?
(c) A blood test shows that the individual 14 is a carrier of haemophilia. The member numbered 15 has recently married the individual numbered 14. What is the probability that their first child will be haemophilic male?

(OR)

(a) Why is haemophilia rare among females?

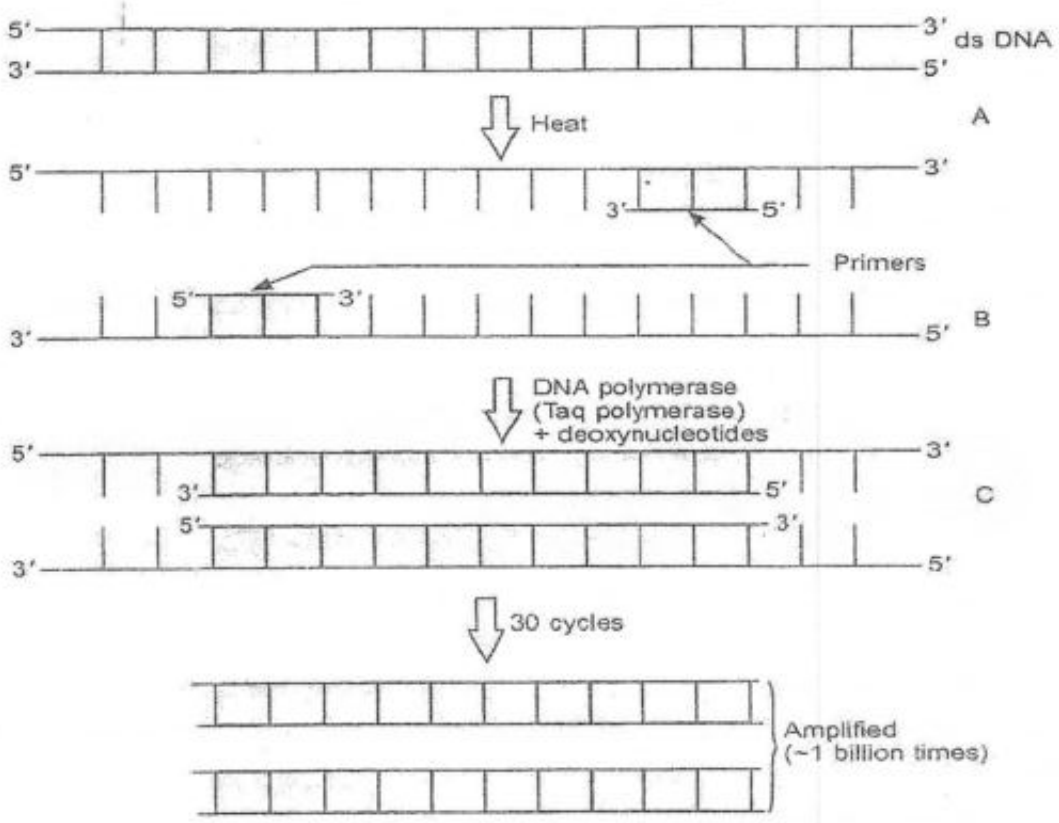
SECTION E

31) a) Write the observations made at the end of Connell's field experiment on barnacles on the rocky sea coasts of Scotland. (5)
b) Name any two categories of organisms that in general are adversely affected by competition.
c) Differentiate between secondary consumers and secondary carnivores.
d) Write two possible uses of single nucleotide polymorphism (SNP)

(OR)

(i) Mention one similarity and one difference between geitonogamy and xenogamy.
(ii) What do 'cry' genes in Bacillus thuringiensis code for? State importance of Bt genes for cotton plants.
(iii) Mention the parts of human body that get affected by Pneumonia and common cold infections. Write the causative against of these two diseases.

32) Carefully observe the picture given below and answer the questions. (5)



(a) Name the process illustrated in the picture and its objective.

(b) Name the step A and mention its importance.

(c) What are primers and why are they needed in the process?

(d) Mention the source of Taq polymerase enzyme shown in the picture. Why can no other DNA polymerase enzyme be used for the process? Name the steps C it catalyses.

(OR)

(i) Draw a diagrammatic sectional view of a mature anatropous ovule and label the following parts along with their names in it.

(a) Envelopes that develop into a seed coat.

(b) Junction between ovule and funicle

(c) The structure that forms perisperm in black pepper seed.

(d) Opening through which the pollen tube enters into it.

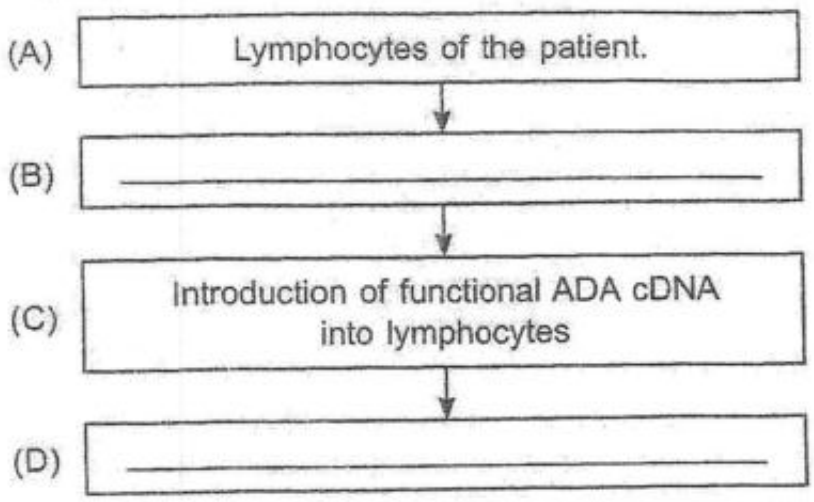
(e) Stalk that attaches the ovule to the placenta.

(f) The seven celled and eight nucleate structure.

(ii) Do all the pollengrains remain viable for the same length of time? Support your answer with a suitable example.

(iii) How are pollen grains stored in the pollen banks?

33) The clinical gene therapy is given to a 4 years old patient for an enzyme which crucial for the immune system to function. (5)



Observe the therapeutical flow chart and give the answer of the following :

(i) Complete the missing steps (B) and (D).

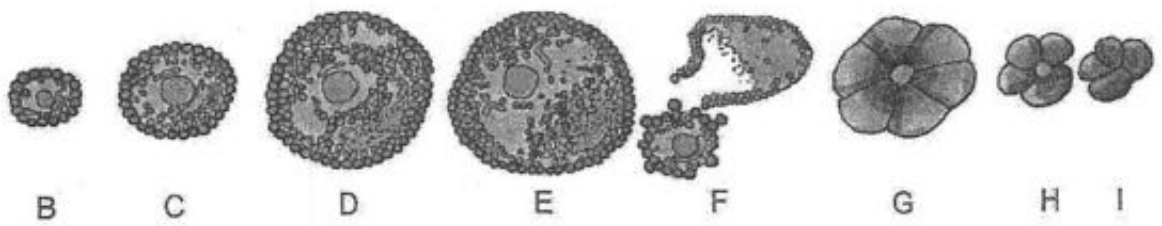
(ii) Identify the disease to be cured.

(iii) Why is the above method not a complete solution to the problem?

(iv) Scientists have developed a method to cure this disease permanently. How?

(OR)

The following is the illustration of the sequence of ovarian events (A – I) in a human female.



(a) Identify the figure that illustrates ovulation.

(b) Name the ovarian hormone and the pituitary hormone that have caused the above mentioned event.

(c) Explain the changes that occur in the uterus simultaneously in anticipation.

(d) Write the difference between 'C' and 'H'.

(e) Name the stage of ovum inside the Graafian follicle. What is the number of chromosomes in it?

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 06.12.2023 **PREBOARD EXAMINATION 2023-'24** **Time : 3 Hrs.**

CLASS : XII **SUBJECT – COMPUTER SCIENCE (083)** **Max. Marks : 70**

General Instructions:

1. Please check this question paper contains 35 questions.
2. The paper is divided into 5 sections A, B, C, D and E.
3. Section A consists of 18 questions. Each question carries 1 mark.
4. Section B consists of 7 questions. Each carries 2 marks.
5. Section C consists of 5 questions. Each question carries 3 marks.
6. Section D consists of 2 questions. Each carries 4 marks.
7. Section E consists of 3 questions. Each question carries 5 marks.

SECTION – A

1. State True or False. (1)
" A tuple is an Editable data store."

2. Which components starts with # symbol? (1)
a. Double line b. Multi-line c. Single-line d. All of these

3. What is the output of the following code? (1)
```
A = 10
B = 2
print('Output is ',(A+10*2+B))
```
a. Output is 22 b. Output is 32 c. Output is None d. None of these

4. Give the output for the following program segment given below: (1)
```
for i in range(-5, -7, -1):
    print(i+1)
```
a. -7, -6, -5 b. -5,-6,-7 c. No output d. Error

5. Which index number is used to represent last character of the string? (1)
a. -1 b. 1 c. 0 d. n-1

6. The ..... mode opens a file for both reading and writing. (1)
a. wb b. bw c. r+ d. a+

7. Each key pair value in a dict is separated by a ..... (1)
a. : b. ; c. - d. =

8. A table needs to restrict Salary column values to more than 50000. The constraint that has to be used is (1)
a. NULL b. primary key c. check d. not null

9. You can repeat the elements of the tuple using which operator? (1)
a. * b. + c. ** d. %

10. For readline(), a line is terminated by (1)
a. '\n' b. eof c. Either a. or b. d. None of these

11. A table can be sorted by ..... fields. (1)
a. 1 b. 2 c. more than 2 d. None of these

12. The join operation can join ..... tables. (1)
a. 1 b. 2 c. 3 d. Multiple

13. State whether the following statement is True of False. A device that connects the network cable to the NIC is hub. (1)

14. What will be the output of the following code?
```
a,b = 10,5
x,y=a+b, b-2
z = x-y
print('x:', x, 'y:', y, 'z:', z)
```
a. x:16 y:3 z:20 b. x:15 y:3 z:20 c. x:16 y:3 z:12 d. x:15 y:3 z:12

15. In ..... card, the amount gets deducted from the card's bank account immediately. (1)

16. In which topology, Every node is connected to two other nodes? (1)
a. Bus b. Mesh c. Star d. Ring

17. **Assertion (A)** : User-defined functions must stay in a Python module. (1)
Reasoning (R) : Each user-defined function must stay in the module, which is linked to a folder where all the user-defined functions of the module stay.
a. Both A and R are true, and R is the correct explanation of A.
b. Both A and R are true, and R is not the correct explanation of A.
c. A is true, but R is false.
d. A is false, but R is true.

18. **Assertion (A) :** Python supports adding data in a file, preserving the previous data. (1)
Reasoning (R) : The write mode erases all previous data of a pre-existing file.
a. Both A and R are true, and R is the correct explanation of A.
b. Both A and R are true, and R is not the correct explanation of A.
c. A is true, but R is false.
d. A is false, but R is true.

Contd...2

SECTION – B

19. (a) Mr. Rahul Manager of ABC company, recently discovered that the communication between the company's account office and HR office is extremely slow and signals drop frequently. These offices are 120 metres away from each other and connected by an Ethernet cable.
(i) Suggest to him the device which can be installed in between the office for smooth communication.
(ii) What type of network is formed by having this kind of connectivity out of LAN, MAN or WAN ?

(b) Expand the terms: ARPANET, WWW.

OR

(a) Name the protocol which helps you to communicate between a web server and a web browser.
(b) Give one function of Gateway. [1+1]

20. Write the corresponding Python expression for the following mathematical expression:
(a) $z = a/a+b-d^2+\sqrt{c}$ (b) $z = x^2+y^3+\sin(45)$ [2]

21. Determine which of the following identifiers are valid? If invalid, explain with reason. [2]
(i) Month_1 (ii) _per (iii) #total (iv) cat$2

OR

Find the output of the following code:

```
i = 1
while i<5:
    print(i)
    i = i *2
```

22. Differentiate between char(n) and varchar(n) data types with respect to databases. [2]

OR

Write the output of the following:

Table: ITEMS

CODE	INAME	QTY	PRICE	COMPANY	TCODE
1001	DIGITAL PAD 121	120	11000	XENITA	T01
1002	LED SCREEN 40	70	38000	SANTORA	T02
1003	CAR GPS SYSTEM	50	2150	GEONOW	T01
1004	DIGITAL CAMERA 12X	160	8000	DIGICLICK	T02
1005	PEN DRIVE 32 GB	600	1200	STOREHOME	T03

(a) Select max(price), min(price) from items;
(b) Select price*qty as amount for items where code = 1004

23. Find the output of the following: [2]

```
def calcresult():
    i = 9
    while i>1:
        if (i%2) >1:
            x = i%2
            i = i - 1

        else:
            i = i – 2
            x = i
        print(x**2)
```

24. What is token? Name the tokens that are available in Python. [2]

OR

Find the syntax errors in the following program and underline them after correcting them.

```
90 = w
While w>60):
    Print(w)
    W = w – 50
```

25. Write a Python program to accept any integer and check whether the given number is prime or not. [2]

SECTION – C

26. Consider the tables FAMILY and OCCUPATION: [1X3 = 3]

Table: FAMILY

NO	Name	FEMALE_MEMBER	Male_members	Income	OccupationID
1	PANDEY	3	2	7000	O1
2	MISHRA	4	1	50000	O2
3	QURESHI	6	3	8000	O2
4	THOMAS	2	2	25000	O1
5	SONI	7	2	20000	O3
6	SHARMA	3	2	14000	O2
7	PRASAD	6	3	5000	O1
8	SAHOO	5	2	10000	O2

Contd...3

Table: OCCUPATION

OccupationID	Type
O1	Service
O2	Business
O3	Mixed

Write SQL queries for the statements (a) to (c) based on the tables FAMILY and OCCUPATION.
(a) To select all information of family whose occupation is 'Service'.
(b) To list the names of family, where female members are more than 3.
(c) To list all names of family with income in descending order.

27. Write a method Count_File() to count and display the number of lines starting with the word 'FILE' (including small cases and upper cases present in a text file 'start.txt'. [3]

OR

Write the definition of the function that takes input as a sentence and display the list of words then ends with a lower case vowels and list the words that ends with the lower case consonant.

28. Study the following tables DOCTORS and SALARY and write SQL commands for the given questions (a) to (c). [3]

TABLE : DOCTOR

ID	NAME	DEPT	SEX	EXPERIENCE
101	RAKESH	ENT	M	12
104	MOHAN	ORTHO	M	5
107	RICHA	CARDORTHOIOLOGY	F	10
114	GEETA	SKIN	F	3
109	KAVITA	MEDICINE	F	9
105	REENA	ORTHO	F	10
117	TEENA	ENT	F	3
111	SAURABH	MEDICINE	M	12
130	PAWAN	ORTHO	M	15

TABLE: SALARY

ID	BASIC	ALLOWANCE	CONSULTATION
101	12000	1000	300
104	23000	2300	500
107	32000	4000	500
114	12000	5200	100
109	42000	1700	200
105	18900	1690	300
130	21700	2600	300

(a) Display name of all doctors who are in MEDICINE department having more than 10 years experience from the table DOCTOR.
(b) Display the average salary of all doctors working in ENT department using the table DOCTOR and SALARY. SALARY = BASIC+ALLOWANCE.
(c) Display the minimum ALLOWANCE of female doctors.

29. Write a program to count the frequency of elements entered by the user. [3]

30. Write a PUSH operation of a stack containing teacher names. Notice that the name should only be accepted as characters, space and period. [3]

31. Consider the following table FLIGHTS: [1x4 = 4]

Table: FLIGHTS

FL_NO	STARTING	ENDING	NO_FLIGHT	NO_STOPS
IC301	MUMBAI	DELHI	8	0
IC799	BENGALURU	DELHI	2	1
MC101	INDORE	MUMBAI	3	0
IC302	DELHI	MUMBAI	8	0
AM812	KANPUR	BENGALURU	3	1
IC899	MUMBAI	KOCHI	1	4
AM501	DELHI	TRIVANDRUM	1	5
MU499	MUMBAI	MADRAS	3	3
IC701	DELHI	AHMEDABAD	4	0

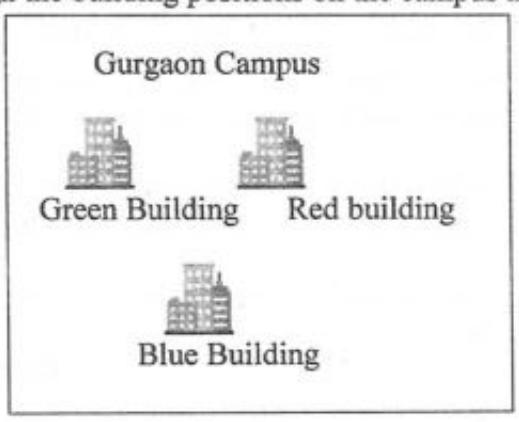
(a) Display the total number of flights.
(b) Display the number of flights whose flight number starts with 'IC'.
(c) Display the average number of stops.
(d) Display the number of stops.

Contd...4

32. Create a Binary file 'student.bin' to hold students' records like NAME, MOBILE and ADHAR_NO. Write the following functions:
(a) File_create() to create a binary file to store few records.
(b) Display_data() to display record details in a suitable format. [4]

33. Zenith consultants are setting up a secure network for their office campus of Gurgaon for their day-to-day office and web based activities. They are planning to have connectivity between 3 buildings and the head office situated in Mumbai.
Answer the questions (a) to (e) after going through the building positions on the campus and the other details: [1x5 = 5]

Head Office Mumbai



Distance between various buildings

Red building to Green building	110 m
Green building to Blue building	45 m
Blue building to Red building	66 m
Gaugaon campus to Head office	1760 km

Number of Computers

Green building	32
Red building	150
Blue building	45
Head Office	10

(a) Suggest the most suitable place to house the server of this organisation. Also, give a reason to justify your suggested location.
(b) Suggest the cable layout of connections between the buildings inside the campus.
(c) Suggest the placement of the following devices with justification:
(i) Switch (ii) Repeater
(d) Write the use of Modem in a network.
(e) What is the use of Firewall in a network?

34. (a) Give a suitable example of order by clause used in MySQL.
(b) Consider the table Airtel with the following fields:
Item_id, item_name, qty, price [1+4 = 5]
Write the Python code to fetch all records from database Mobile.(User is 'root'. Password is 'DPSB').

OR

(a) Mention any two DDL commands.
(b) Consider the following MySQL table : JIO with the following fields:
Customer_Name, Mobile_Number , Area
Write python code to display the names of those customers who are either from 'Raipur' or from 'Durg'. (User is 'root'. Password is 'DPSB').

35. (a) Why are CSV fields called so? [2+3]
(b) Write a program using two user-defined functions as follows:
Write_Record() to add records of furniture of the following structure to a binary file 'furniture.dat'.
Furniture_id fur_name type price
The function should add records keeping the existing records.

Search_fur() To display the records from the file 'furniture.dat' whose type is 'wooden'.

OR

(a) Write the advantages of using the 'ab' mode over 'wb' mode.
(b) Write a Python program using two functions as follows:
Count_data() to count and display records from the file 'emp.csv' fo the following structure whose Etype is 'permanent'
Emp_no Emp_name Dept Etype salary
Append_data() to accept data of as many employees and add them to the CSV file 'emp.csv' preserving the existing employee data.

DELHI PUBLIC SCHOOL, BHILAI

DATE : 13.12.2023 **PREBOARD EXAMINATION, 2023-'24** **Time : 3 Hrs.**

CLASS : XII **SUBJECT – ACCOUNTANCY (055)** **Max. Marks : 80**

General Instructions:

1. This question paper contains 34 questions. All questions are compulsory.
2. This question paper is divided into two parts, Part A and B.
3. Part - **A is compulsory for all candidates.**
4. Part - **B** has two options i.e. **(i) Analysis of Financial Statements and (ii) Computerized Accounting.** Students must attempt **only one** of the given options.
5. Question 1 to 16 and 27 to 30 carries 1 mark each.
6. Questions 17 to 20, 31and 32 carries **3** marks each.
7. Questions from 21, 22 and 33 carries **4** marks each
8. Questions from 23 to 26 and 34 carries **6** marks each
9. There is no overall choice. However, an internal choice has been provided in 7 questions of **one mark**, 2 questions of **three marks**, 1 question of **four marks** and 2 questions of **six marks.**

PART A

ACCOUNTING FOR PARTNERSHIP FIRMS AND COMPANIES

	QUESTIONS	
1	Closing entry for interest on loan allowed to partners will be (a) Profit and Loss A/c … Dr. To Interest on Partners Loan A/c (b) Interest on loan … Dr. To Profit and Loss Appropriation A/c (c) Profit and Loss Appropriation A/c …Dr. To Interest on Partners loan A/c (d) Profit and Loss Appropriation A/c …Dr. To Interest on loan A/c	1
2	A, B, and C are partner's sharing profits in the ratio of 2:2:1 According to the partnership agreement C is to get a minimum amount of ₹ 40,000 as his share of profits every year. The net profit for the year ended 31st March, 2023 amounted to ₹ 1,60000. How much amount contributed by A to meet C's deficiency (a) ₹ 8,000 (b) ₹ 4,000 (c) ₹ 6,000 (d) ₹ 2,000	1
3	**Assertion (A) :** All accumulated profits are divided among the existing partners in their profit-sharing ratio. **Reason (R) :** At the time of retirement of a partner, employees' provident fund is divided among old partners in old ratio: (a) **Assertion** is correct but **Reason** is wrong. (b) Both **Assertion** and **Reason** are correct, but **Reason** is not the correct explanation of **Assertion.** (c) Both **Assertion** and **Reason** are incorrect. (d) Both **Assertion** and **Reason** are correct, and **Reason** is the correct explanation of **Assertion.**	1
4	A, B and C were partner in a firm sharing Profit in the ratio of 3:2:1. During the year the firm earned profit of ₹ 84,000. Calculate the amount of Profit or Loss transferred to the Capital A/c of B. (a) Loss ₹ 87,000 (b) Profit ₹ 87,000 (c) Profit ₹ 28,000 (d) Profit ₹14,000	1
5	The relation of the partner with the firm is that of (a) An owner (b) An agent and a Principal (c) An agent (d) Manager **OR** A and B are partners in a firm sharing profits in the ratio of 3: 2. They decided to share future profits equally. Calculate A's gain or sacrifice (a) 2/10 (sacrifice) (b) 5/10 (gain) (c) 1/10 (Gain) (d) 1/10 (sacrifice)	1
6	A firm earned average profit of ₹ 45,000. Rate of return on capital employed is 12% p.a. Total capital employed is ₹ 4,00,000. Goodwill on the basis of two years purchase of super profit is: (a) ₹ 6,000 (b) ₹ 12,000 (c) ₹ 18,000 (d) None of these **OR** In the absence of Partnership Agreement, interest on Drawings of a partner is charged (a) @ 8% per annum (b) @ 6 % per annum (c) @ 12% per annum (d) No interest is charged	1
7	Mohan draws ₹ 10,000 p.m. on last day of every month for his personal use. If interest is to be charged @5% p.a., interest chargeable from him in accounting year will be (a) ₹ 3,250 (b) ₹ 2,750 (c) ₹ 3,000 (d) ₹ 3,500 **OR** The net assets of the firm including fictitious assets of ₹ 5,000 are ₹ 85,000. The net liabilities of the firm are ₹ 30,000. The normal rate of return is 10% and the average profits of the firm are ₹ 8,000. Calculate the goodwill as per capitalization of super profits. (a) ₹ 20,000 (b) ₹ 30,000 (c) ₹ 25,000 (d) None of the above	1

Contd…2

8	X, Y and Z are partners in a firm sharing profits and losses in the ratio of 6:4:1. X guaranteed profit of ₹ 15,000 to Z. Net profit for the year ending 31st March, 2019 was ₹ 99,000. X's share in the profit of the firm will be (a) ₹ 30,000 (b) ₹ 15,000 (c) ₹ 48,000 (d) ₹ 45,000 **OR** Biju and Seema were partner in a firm sharing profit and losses in the ratio of 3: 1 Their capital were ₹ 1,20,000 and ₹ 2,40,000 respectively they were entitled to interest on capital @ 10%. The firm earned profit of ₹ 18,000 during the year. The interest on Biju's capital will be (a) ₹ 12,000 (b) ₹ 10,800 (c) ₹ 7,200 (d) ₹ 6,000	1
9	On admission of a partner, which of the following items in the Balance Sheet is transferred to the credit of Capital Accounts of old partners in the old Profit-sharing Ratio, if Capital Accounts are maintained following Fluctuating Capital Accounts Method (a) Deferred Revenue Expenditure ; (b) Profit and Loss Account (Debit Balance); (c) Profit and Loss Account (Credit Balance); (d) Balance in Drawings Account of partners.	1
10	A and B share profits in the ratio of 3:4. C is admitted for 1/5th share. New Profit-sharing ratio will be (a) 3:4:1 (b) 12:16:7 (c) 16:12:7 (d) 12:6 :7 **OR** Which of the following is not true with respect to Admission of a partner? (a) A new partner can be admitted if it is agreed in the partnership deed. (b) If all the partners agree, a new partner can be admitted. (c) A new partner has to bring relatively higher capital as compared to the existing partners (d) A new partner gets right in the assets of the firm	1
11	Dissolution of a firm may take place due to ..... (i) insolvency of a partner (ii) death of a partner (iii) change in profit sharing ratio (iv) admission of new partner (v) on the completion of venture (vi) expiry of period of partnership **Alternatives** (a) (iii) (iv) (v) (vi) (b) (i) (ii) (iii) (v) (vi) (c) (i) (ii) (v) (vi) (d) (i) (iii) (v) (vi)	1
12	J. Ltd. re-issued 2,000 shares, which were forfeited by crediting share forfeiture account by ₹ 3,000. These shares were re-issued at ₹ 9 per share. The amount transferred to capital reserve will be: (a) ₹ 3,000 (b) ₹ 2,000 (c) ₹ 1,000 (d) Nil	1
13	According to Table F of the Companies Act, 2013 interest on calls in arrears charged should not exceed: (a) 5% p.a. (b) 6% p.a. (c) 8%p.a. (d)10%p.a.	1
14	According to Section 52 of the Companies Act, the amount in the Securities Premium Account cannot be used for the purpose of: (a) Issue of fully Paid Bonus Shares (b) Writing Off Losses of the Company (c) Writing off Preliminary Expenses (d) Writing Off Commission or Discount on Issue of Shares **OR** Rajan Limited issued 50,000 shares at a price lower than the nominal value of the share. The shares issued are called: (a) Sweat equity shares (b) Redeemable Preference shares (c) Equity shares (d) Bonus shares	1
15	10,000 equity shares of ₹ 10 each were issued to public at a premium of ₹ 2 per share payable on allotment. Applications were received for 12,000 shares. Amount of securities premium account will be: (a) ₹ 20,000 (b) ₹ 24,000 (c) ₹ 4,000 (d) ₹ 1,600	1
16	Which of the following statements is/are correct? (i) Interest on debentures is calculated at the fixed percentage on the issue price. (ii) Debenture is the evidence of company's borrowings. **Alternatives** (a) Only (i) (b) Only (ii) (c) Both (a) and (b) (d) None of these	1
17	A, B and C are sharing profits in the ratio of 3:4:3. On 1st Sept 2023, A died. According to partnership agreement deceased partner's share in profit was to be computed on the basis of last year's profit which was ₹ 2,52,000 including ₹ 20,000 of profit on sale of machinery and excluding ₹ 8,000 of loss of goods by fire. For the last several years firms' profits are showing upward trend of 10% every year. Compute A's share of profit for the broken period assuming that accounts are closed on 31st March every year and pass journal entry.	3

Contd...3

18 Amarjeet, Baljeet and Charanjeet are in partnership for sharing profits in the ratio of 5:3:2. There fixed capitals as on 31st March 2023 were ₹ 2,00,000, ₹ 2,00,000 and ₹ 1,00,000 respectively while their drawings were ₹ 10,000 each. After distribution of annual profits of ₹ 90,000 it was discovered that Interest on Capital was credited to all partners @ 12% p.a. in place of 10% p.a. and interest on drawings @ 10% p.a. was omitted in respect of Baljeet. Pass single adjustment entry to rectify the errors and show workings clearly. **3**

OR

Veena, Meena and Sheena are partners sharing profits in the ratio of 3:2:1. Their capitals on 1st April 2022 were ₹ 5,00,000; ₹ 3,00,000 and ₹ 2,00,000 respectively. As per the partnership deed partners are entitled to 10% p.a. interest on capital. Sheena is guaranteed a minimum profit of ₹ 45,000 p.a. Deficiency (if any) will be borne by Veena and Meena in the ratio of 3:2.
The firm incurred a loss of ₹ 90,000 for the year ended 31st March 2023 Give necessary entries giving effect to the minimum guaranteed profit to Sheena.

19 Anand Ltd. took over running business with assets of ₹ 6,00,000 and liabilities of ₹ 60,000 from Sethi Ltd for the purchase consideration of ₹ 5,50,000. It paid the purchase consideration by issuing 8% debentures of ₹ 100 each at Par, redeemable at 5% premium after 5 years. There was a balance of ₹ 25,000 in Securities Premium Reserve Account in the books Akshat Ltd. (free from any charge) and company used it to write off the loss on issue of Debentures in the year of issue of Debentures. Pass journal entries. **3**

OR

Daljeet Ltd. took a loan of ₹ 5,00,000 from ICICI Ltd. and issued 6000 12% Debentures of ₹ 100 each as collateral security. Pass journal entry to record the transaction and show its effect on company's Balance Sheet.

20 Complete the following journal entries: **3**

Date	Particulars	L.F	Dr. (₹)	Cr. (₹)
01.04.2023	Bank A/c Dr. To ..... A/c To Premium for Goodwill A/c (Being Capital and share of goodwill brought in by C)		1,40,000	 ?? ??
01.04.2023	Premium for Goodwill A/c Dr. To A's Capital A/c To B's Capital A/c (Being C's share of goodwill credited to old partners in 3:2)		??	 ?? 14,000
01.04.2023	A's Capital A/c Dr. B's Capital A/c Dr. To ..... (Being 50% of the goodwill withdrawn by the old partners)		?? ??	 ??

21 On 1st April 2022, Ginni Filaments Ltd. was formed with an authorized capital of ₹10,00,000 divided into 1,00,000 Equity Shares of ₹10 each. The company issued prospectus inviting applications for 90,000 equity shares. The company received applications for 85,000 shares. During the first year, ₹8 were called. Vasu holding 1,000 shares &Vidhi holding 2,000 shares did not pay the first call of ₹2 per share. Vidhi's shares were forfeited after the first call and later on 1,500 of the forfeited shares were reissued at ₹6 per share, ₹8 called up.
Show share capital in the Balance Sheet of the company as per Schedule – III, Part – I of the Companies Act, 2013. Also prepare Notes to the Account for the same. **4**

22 Amardeep and Hardeep were partners in a firm. They decided to dissolve their firm. Pass necessary Journal entries for the following after various assets (other than Cash and Bank) and third-party liabilities have been transferred to Realisation Account: **4**

(a) There was furniture worth ₹ 50,000. Amardeep took over 50% of the furniture at 10% discount and the remaining furniture was sold at 30% profit on book value.
(b) The firm paid realisation expenses amounting to ₹ 5,000 on behalf of Hardeep who had to bear these expenses.
(c) There was an outstanding bill for repair for ₹2,000 which were paid off.
(d) Creditors, to whom the firm owed ₹ 6,000, accepted stock of ₹ 5,000 at a discount of 5% and the balance in cash.

Contd...4

23 Amrik Ltd. issued 50,000 shares of Rs 10 each at a premium of ₹ 2 per share payable as ₹ 3 on application, ₹ 4 on allotment (including premium), ₹ 2 on first call and the remaining on second call. Applications were received for 75,000 shares and a pro-rata allotment was made to all the applicants. All moneys due were received except allotment and first call from Sundeep who applied for 1,200 shares. All his shares were forfeited. The forfeited shares were reissued for ₹ 9,600. Final call was not made. Prepare Cashbook and pass necessary journal entries. **6**

OR

Vimal Ltd. issued 30,000 shares of ₹ 10 each payable as ₹ 3 on application, ₹ 3 on allotment, ₹ 2 on first Call and ₹ 2 on second call.

Applications were received for 40,000 shares and a pro-rata allotment was made to the applicants of 35,000 shares. All money due were received except allotment and first call from Mohit who had applied for 2,100 shares. His shares were forfeited after first call. Subsequently, the second call was duly made and duly received. Thereafter, the forfeited shares were reissued for ₹ 9 per share fully paid. Pass the necessary journal entries.

24 A and B are partners in a firm sharing profits and losses in the ratio 3:1. They admit C for a ¼ share (entirely taken from A) on31st March 2023 when their Balance Sheet was as follows: **6**

Liabilitie	Amount	Assets		Amount
Employee Provident fund	17,000	Goodwill		40,000
Investment Fluctuation Fund	4,100	Stock		15,000
Workmen compensation fund	6,000	Debtors	50,000	
Capitals:		Less: Provision		
A 54,000		for Bad Debts.	2,000	48,000
B 35,000	89,000	Cash		6,100
		Investments		7,000
	1,16,100			**1,16,100**

The following adjustments were agreed upon:

(a) C brings in ₹ 16,000 as goodwill and ₹ 30,000 as capital.

(b) Bad debts amounted to ₹ 3,000.

(c) Market value of investment is ₹ 4,500.

(d) Liability on account of workmen Compensation Reserve amounted to ₹2,000.

(e) Capital of A and B will be adjusted on the basis of C's share and adjustment will be done by opening current accounts.

Prepare Revaluation Account and Partners' Capital Accounts of A, B and C and Balance Sheet.

OR

X, Y and Z are partners in a firm sharing profits in proportion of 1/2, 1/6 and 1/3 respectively. The Balance Sheet as on April 1, 2023 was as follows:

Liabilities	Amount	Assets		Amount
Employee Provident fund	12,000	Freehold Premises		40,000
Sundry Creditors	18,000	Machinery		27,000
General Reserve	12,000	Furniture		12,000
Capitals:		Stock		22,000
X 30,000		Debtors	20,000	
Y 30,000		Less: Provision		
Z 28,000	88,000	for Bad Debts	1,000	19,000
		Cash		10,000
	1,30,000			**1,30,000**

Z retires from the business and the partners agree that:

(a) Machinery is undervalued in the books 10%.

(b) Provision for bad debts is to be increased to ₹ 1,500.

(c) Furniture was taken over by Y for ₹ 14,000 against cash payment

(d) Goodwill is valued at ₹ 21,000 on Z's retirement.

(e) The retiring partner was paid half of his amount due in cash.

Prepare Revaluation Account and Partners Capital Accounts and Balance Sheet of the reconstituted firm.

Contd...5

25 A, B and C were partners in a firm sharing profits in the ratio of 5:3:2 respectively. On march 31st 2023 their balance sheet was as under — **6**

Balance Sheet as on March 31,2023

Liabilities	₹	Assets	₹
Capitals		Building	2,00,000
A 3,00,000		Machinery	3,00,000
B 2,50,000		Patents	1,10,000
C 1,50,000	7,00,000	Goodwill	1,00,000
Reserves fund	60,000	Debtors	80,000
Creditors	1,10,000	Cash	80,000
	8,70,000		**8,70,000**

A died-on October 1, 2023. It was agreed between his executers and the remaining partners that:
(a) Goodwill of the firm is valued at 2 ½ years purchase of average profits for the last three years. The average profit was 1,50,000.
(b) Interest on capital to be provided at 10% p.a.
(c) Profit for the year 2023 -24 be taken as having accrued at the same rate as that of the previous year which was 50,000.
(d) A sum of Rs. 4,00,000 is given to his executor through bank draft immediately and balance amount is transferred to his executor's loan account.

Prepare A's capital account to be presented to his executors as on 1.10.2023.

26 (i) Ram Ltd issued 25,000, 8% debentures of ₹100 each, at premium of ₹ 20 each and are redeemable at premium of ₹ 10. Amount was payable on application ₹ 50 and balance including premium on allotment. Record necessary entries for issue of debentures in the books of Ram Ltd. — **6**

(ii) Bhim Ltd issued 20,000, 9% debentures of ₹50 each at a discount of 8% redeemable at par at any time after 9 years. Record necessary entries in the books of Bhim Ltd.

Part B :- Analysis of Financial Statements

27 Which of the following is not a tool of financial analysis? — **1**
(a) Comparative income statement (b) Comparative position statement
(c) Statement of profit and loss (d) Cash flow statement

28 Which of the following is an operating' income? — **1**
(a) Sale of Merchandise (b) Interest Income (c) Dividend Income (d) Profit on the sale of old car

29 ABC Ltd is a financial company which provides loan and invest into shares. At the year end, company received ₹ 50,000 interest on loan. Where will be the amount of interest presented? — **1**
(a) Activity arising from interest will be shown in investing activity
(b) Activity arising from interest will be shown in financing activity
(c) Activity arising from interest will be shown in operating activity
(d) None of the above

30 The two basic measures of liquidity are: — **1**
(a) Inventory turnover and current ratio (b) current and liquid ratio
(c) gross profit and operating ratio (d) current and debt equity ratio

OR

A Company's liquid assets are ₹ 5,00,000 and its current liabilities are ₹3,00, 000.Thereafter, it paid ₹1,00,000 to its trade payables. Quick ratio will be:
(A) 1.33:1 (B) 2.5:1 (C) 1.67:1 (D) 2:1

31 Under which sub-heading will the following items be shown in the balance sheet of a company as per revised schedule A (VI) part I of the companies act 2013: — **3**
(I) Capital redemption reserve (II) Goodwill (III) Loose tools
(IV) Outstanding Expenses (V) Calls in advance (VI) Vehicle

32 Prepare Common-Size Statement of Profit and Loss from the following — **3**

Particulars	Note No.	31st March,2023 (₹)	31st March,2022 (₹)
(I) Revenue from Operations		50,00,000	40,00,000
(II) Expenses			
Purchase of Stock-in-Trade		20,00,000	6,00,000
Changes in Inventories of Stock-in-Trade		(2,00,000)	3,00,000
Depreciation and Amortisation Expenses		5,00,000	6,00,000
Other Expenses		10,00,000	15,00,000
Total Expenses		33,00,000	30,00,000
(III) Profit before Tax (I-II)		17,00,000	10,00,000
(IV) Tax Expense		5,10,000	3,00,000
(V) Profit after Tax (III-IV)		11,90,000	7,00,000

Contd...6

33 (i) From the following details, calculate interest coverage ratio: **4**

Net Profit after tax ₹ 60,000; 15% Long-term debt 10,00,000; and Tax rate 40%.

(ii) From the following information, calculate inventory turnover ratio:

Inventory in the beginning = 18,000
Inventory at the end = 22,000
Net purchases = 46,000
Wages = 14,000
Revenue from operations = 80,000
Carriage inwards = 4,000

OR

Debt to capital employed Ratio is 0.3:1. State whether the following transaction will decline improve or not change the ratio. Also give reasons for the same.

(i) Tax refund of ₹ 1,50,000 during the year.
(ii) Purchased goods on credit for ₹ 3,00,000 for a credit of 15 months, assuming operating cycle is of 18 months.
(iii) Conversion of Debentures into Equity Shares of ₹ 4,00,000.
(iv) Sale of old Building costing ₹ 5,00,000 for ₹ 3,00,000.

34 **6**

Following is the Balance Sheets of Baldeep Ltd., as on 31st March, 2023:

Particulars	Note No.	2022-23(₹)	2021-22(₹)
EQUITY AND LIABILITIES			
(1) Shareholders Funds			
(a) Share capital		7,00,000	5,00,000
(b) Reserves & Surplus	1	3,50,000	2,00,000
(2) Non-Current Liabilities			
Long Term borrowings		50,000	1,00,000
(3) Current Liabilities			
Trade payables		52,000	55,000
Short Term provision	2	1,20,000	80,000
Total		12,72,000	9,35,000
ASSETS			
(1) Non-Current Assets			
Property, Plant and Equipment and Intangible Assets			
(i) Tangible assets	3	5,00,000	5,00,000
(ii) Intangible assets	4	95,000	1,00,000
(b) Non-current investments		1,00,000	-
(2) Current Assets			
a) Inventories		1,30,000	55,000
(b) Trade Receivables		1,47,000	80,000
(c) Cash & Cash equivalents		3,00,000	2,00,000
Total		12,72,000	9,35,000

Notes to Accounts:

S. NO.	Particulars	31st March, 2023 (₹)	31st March, 2022 (₹)
1.	Reserves and Surplus		
	Surplus (Balance in Statement in Profit and Loss)	3,50,000	2,00,000
2.	Short-term Provisions:		
	Provision for Tax	1,20,000	80,000
3.	Tangible Assets		
	Property, Plant and Equipment:		
	Machinery	7,20,000	6,50,000
	Less Accumulated Depreciation	(2,20,000)	(1,50,000)
		5,00,000	5,00,000
4.	Intangible Assets		
	Goodwill	95,000	1,00,000

Additional information:

(i) During the year Machinery costing ₹1,00,000 (Accumulated Depreciation 20,000) sold at loss of ₹12,000.
(ii) Tax Paid during year ₹ 60,000.
(iii) Proposed dividend for 2021-22 and 2022-23 were ₹ 10,000 and ₹ 12,000 respectively. Prepare Cash Flow Statement.

DELHI PUBLIC SCHOOL, BHILAI

DATE : 06.12.2023 | **PREBOARD EXAMINATION 2023-'24** | **Time : 3 Hrs.**

CLASS : XII | **SUBJECT – ECONOMICS** | **Max. Marks : 80**

General Instructions :

1. This question Paper contains 34 questions. All questions are compulsory.
2. This question paper contains 20 MCQ of 1 mark each.
3. There are 4 short answer questions of 3 marks each to be answered in 60-80 words.
4. There are 6 short answer questions of 4 marks each to be answered in 80-100 words.
5. There are 4 short answer questions of 6 marks each to be answered in 120 words.
6. Attempt all questions together.

Section – A [Introductory Macroeconomics]

Q.1 Consumption curve is a straight line, due to---
(a) Zero income level (b) constant marginal propensity to consume
(c) inverse in consumption (d) All of these (1)

Q.2 Process of credit creation by commercial banks comes to an end when-----
(a) Fresh deposits with banks become zero
(b) Reserve ratio become zero
(c) Money multiplier become zero
(d) Total money reserves become equal to initial deposits (1)

Q.3 Statement 1- Repayment of loan taken from IMF will be recorded on debit side.
Statement-2 Surplus in BoP refers to a state where debit side exceeds credit side.

Alternatives :
(a) Statement 1 is true and statement 2 is false
(b) Statement 1 is false and statement 2 is true
(c) Both the statements are true
(d) Both the statements are false (1)

Q.4 Complete the following table-

Producer	Value of output	Intermediate consumption	Value added
Farmer	1000	..... x	1000
Baker	..... (i)	1000	1000
Retail seller	2200	..... (iii)	200
Total	..... (ii)	3000	..... (iv) .....

Alternatives :
(a) 4000, 10400, 4000, 4000
(b) 2000, 5200, 2000 , 2200
(c) 2000, 3000, 3000, 2200
(d) 4000, 52000, 3000, 4000 (1)

Q.5 If the value of average propensity to consume is 0.8 and National income is Rs.4000 crore, the value of savings will be-
(a) Rs. 100 (b) Rs. 200 (c) Rs. 800 (d) Rs. 500 (1)

Q.6 As a custodian of Nations' reserve, RBI keeps-
(a) Reserves of foreign currencies (b) Reserves of gold
(c) Reserves of foreign treasury bills (d) All of the above (1)

Q.7 If marginal propensity to Save is 0.25 and initial change in investment is Rs. 250 crore, then the final change in income would be-
(a) Rs. 1000 (b) Rs. 1200 (c) Rs. 500 (d) Rs. 3500 (1)

Q.8 Consumption function is the functional relationship between ..... and .....
(a) Consumption (b) Aggregate demand
(c) National income (d) Aggregate supply
(i) A and b (ii) b and c (iii) a and c (iv) b and d (1)

Contd...2

Q.9 The difference between narrow money and broad money is.....
(a) Coins and Currency (b) Only currency
(c) Saving deposits of banks (d) Time deposits with banks (1)

Q.10 "Considering the depreciation of Indian Currency in International market, the Reserve Bank of India has decided to purchase Indian currency in the open market. This represent.....exchange rate system-
(a) Fixed (b) Flexible (c) Managed floating (d) Manipulated (1)

Q.11 Find the net value added at market price- (3)

Items	Rs. (in crores)
Output sold (units)	800
Price per unit of output	20
Excise	1600
Import duty	400
Net change in stock	-500
Depreciation	1000
Intermediate cost	8000

Q.12 Inflation in country X is higher than inflation in country Y, and the exchange rate between the two countries is fixed-. What is likely to happen to the trade balance between the two countries? (3)

OR

GNP is the estimated value of the total worth of production and services earned by the normal residents of a country. But to find out NNP, why should we deduct depreciation from GNP?

Q.13 An economy is in equilibrium. Calculate the investment expenditure from the following- (4)
National Income-Rs. 800
Marginal Propensity to save-0.3
Autonomous Consumption- 100

Q.14 Credit creation is inversely related to the reverse deposit ratio. Justify the given statement, using a hypothetical example. (4)

OR

The central bank acts as the banker's bank and perform the function of a supervisor in the financial system. Explain the function of central bank in the above statement.

Q.15 Calculate GNP_{FC} from the following by expenditure method- (4)

Items	Rs. (in crores)
Private final consumption expenditure	1000
Net domestic capital formation	200
Profit	400
Compensation of employees	800
Rent	250
Government final consumption expenditure	500
Consumption of fixed capital	60
Interest	150
Net current transfer from ROW	(-) 80
Net factor income from abroad	(-) 10
Net exports	(-) 20
Net indirect taxes	80

Q.16 (I) Government incurs expenditure to popularize yoga among masses. Analyze its impact on gross domestic product and welfare of the people. (3+3=6)
(II) Explain the precautions that are taken while estimating national income by value added method.

Q.17 (i) From the given information, determine the following- (3+3=6)
A- Capital expenditure
B- Total expenditure

Items	Rs. (in crores)
Fiscal deficit	12000
Revenue deficit	9000
Primary deficit	5000
Revenue receipts	6000
Non-dept capital receipts	10000

(ii) Explain any two sources of non-tax revenue receipts.

OR

(a) Explain the allocation function of the government budget with suitable example.
(b) Govt. raises its expenditure on producing public goods. Which economic value does it reflect? Explain.

Contd...3

Section- B [Indian Economic Development]

Q.18 Green revolution was a major reason of rise in productivity of farming. What is/ are the advantage(s) of conventional farming methods?

(a) Higher output (b) Cost effective
(c) Wider range (d) All of these (1)

Q.19 Identify, which of the following is an incorrect function of environment?

(a) Supplies resources (b) Assimilates waste
(c) Land degradation (d) Provides aesthetic services (1)

Q.20 Unemployment is a situation in which people who are .....and..... to work but are not getting work.

(a) Incapable and willing (b) Capable and not willing
(c) Incapable and not willing (d) Capable and willing (1)

Q.21 India, China and Pakistan all have either very high population or high growth rate of population. Which of the following reasons is/are responsible for this-

(a) Fertility rate (b) Illiteracy (c) Poverty (d) Birth rate

Codes-

(i) A and c (ii) b and c (iii) c and d (IV) a and d (1)

Q.22 Select the correct combination between the following-

Column-1	**Column-2**
A. Licensing on production capacities	(i) MRTP Act, 1969
B. Correcting the BoP situation and bringing inflation Under control	(ii) Stabilization measures
C. Increasing efficiency and international competitiveness	(iii) Globalization
D. Integrating national economy with the world economy	(iv) Structural measures

Codes-

(a) A- I (b) B-ii (c) C-iii (d) D-iv (1)

Q.23 **Statement –1** The emergence of Self-Help group ensured the reduction in the fissures of the formal credit system.

Statement – 2 The borrowing from SHGs mainly confined to consumption purposes by its members.

Alternatives-

(a) Statement 1 is true and statement 2 is false
(b) Statement 1 is false and statement 2 is true
(c) Both the statements are true
(d) Both the statements are false (1)

Q.24 Identify, which of the following are associated with the problem of human capital formation in India-

(a) Brain drain (b) Low academic standards
(c) Rising population (d) Change in social outlook

Codes-

(i) a & b (ii) b & c (iii) a , b and c (iv) a & d (1)

Q.25 The main objective of the Great Leap Forward campaign initiated by China in 1958 aimed at-

(a) Sending students and professionals to work and learn from the countryside
(b) Encouraging people to collectively cultivate lands
(c) Industrializing the country on a massive scale
(d) All of the above (1)

Q.26 Which of the following were prominent features of the Indian Economy on the eve the independence-

(a) Agriculture as the dominant sector
(b) Widespread poverty and low living standards
(c) Industrialization and modern infrastructure
(d) Strong presence of foreign capital

Codes-

(a) a & b (b) b & c (c) a & d (d) c & d (1)

Contd...4

Q.27 **Assertion** : Economists emphasize on the need for expanding educational opportunities, as it accelerated development process.
Reason : Educated people facilitates adaption of new technology and stimulated innovation.

Alternatives
(a) Both assertion and reason are true and reason is the correct explanation of assertion
(b) Both assertion and reason are true and reason is not the correct explanation of assertion
(c) Assertion is true, but Reason is false
(d) Assertion is false, but Reason is true (1)

Q.28 "The Prime Minister urged to increase the rural income by increasing non-farm activities". Explain how non--farm sector can lead to rise in income of people in rural sector? (3)

OR

"Economic growth and human development are inter dependent." Discuss.

Q.29 Defend or reduce the statement with valid explanation.
"It is necessary to replace the private moneylenders by institutional sources of credit". (3)

Q.30 Information technology plays a very significant role in achieving sustainable development and food security. Comment. (4)

Q.31 The traditional handicraft industries were ruined under the British rule. Do you agree with this view? Give reasons in support of your answer. (4)

Q.32 State whether the following statements are true or false, with valid agreements –
(i) The percentage share of agricultural sector in the exports of the country declined in the period 1950-90
(ii) School dropouts are giving way to child labour. (4)

OR

"Composition of foreign trade of any country tells us about the nature of commodities that are exported and imported". What can you state about the composition of foreign trade at the time of independence?

Q.33 (i) Kisan Credit Card caters to the credit needs of rural population". Explain how? (3+3=6)
(ii) Unemployment is an economic as well as a social problem" Comment

OR

(i) How has population explosion and the advent of industrial revolution resulted in environmental crisis?
(ii) "Human Capital formation gives birth to innovation, invention and technological improvements". Do you agree with the given statement? Support your answer with valid arguments.

Q.34 What are the elements of New Economic policy? Discuss Fiscal and Financial reforms under NEP. (6)

DELHI PUBLIC SCHOOL, BHILAI

DATE : 08.12.2023 **PRE-BOARD EXAMINATION 2023** **Time : 3 Hrs.**
CLASS : XII **SUBJECT – BUSINESS STUDIES** **Max. Marks : 80**

General Instructions :

1. *This question paper contains 34 questions.*
2. *Marks are indicated against each question.*
3. *Answer should be brief and to the point.*
4. *Answers to the questions carrying 3 marks may be from 50 to 75 words.*
5. *Answers to the questions carrying 4 marks may be about 150 words.*
6. *Answers to the questions carrying 6 marks may be about 200 words.*
7. *Attempt all parts of the questions together.*

1. Aryan Saxena, the ex-chairman of Zebron Ltd., built up his successor before retiring. Following the norms set up by himself, he handed over the reins of the company to the co-founder Mr. Arjun Sharma, who had the potential to bring about change in the behaviour of others. Name the concept of management which was the reason why Mr. Aryan chose Mr. Arjun to be his successor.
(a) Motivation (b) Leadership (c) Communication (d) Staffing (1)

2. The tool of promotion which involves making use of short-term incentives designed to encourage the buyers to make immediate purchase of a product or service is called:
(a) Advertising (b) Personal selling (c) Sales promotion (d) Public relations (1)

3. It refers to the employee occupying the position or post for which the person has been selected.
(a) Orientation (b) Selection (c) Placement (d) Recruitment (1)

4. It is not always true that just because a plan has worked before it will work again. Identify the related limitation of planning.
(a) Planning leads to rigidity (b) Planning reduces creativity
(c) Planning may not work in a dynamic environment (d) Planning does not guarantee success (1)

5. Samaira went to a free eye camp and got her eyes operated for cataract. The surgery was not done properly, due to which she lost her vision. Where can she file a complaint under Consumer Protection Act?
(a) District Commission (b) State Commission
(c) National Commission (d) None of the above (1)

6. Identify the function of labelling illustrated by the picture given below.

(a) Helps in promotion of product (b) Self-service outlets
(c) Grading of products (d) Providing information required by law (1)

7. The technique of Scientific Management given by Taylor, which aims to establish interchangeability of manufactured parts and products is _____ .
(a) Method study (b) Time study
(c) Standardisation (d) Differential Piece Wage system (1)

8. Yash runs a logistic company. The tour incharges of each trip in the company are expected to submit a report to the event manager on the completion of every trip. Identify the step in the controlling process being described in the above lines.
(a) Setting of standards (b) Measurement of actual performance
(c) Taking corrective action (d) Analysing the deviations (1)

Contd...2

9. Rohit works as an Accounts officer in Lubex Ltd. He also feels very proud of the fact that he is the incharge of recreation committee in his office. Identify the type of incentive being offered to Rohit.
(a) Career advancement opportunities (b) Employee recognition program
(c) Organisational climate (d) Employee participation (1)

10. **Assertion(A) :** The activities of each department need to be linked through coordination.
Reason (R) : Specialists usually think that they are only qualified to evaluate, judge and decide according to their professional criteria.
(a) Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are correct but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is correct but Reason (R) is incorrect.
(d) Assertion (A) is incorrect but Reason (R) is correct. (1)

11. Which type of training is a joint programme of training in which educational institutes and business enterprises collaborate.
(a) Vestibule training (b) Internship training
(c) Apprenticeship training (d) Induction training (1)

12. The time gap between placement of orders and actual receipt of the materials by the firm is called
(a) Production cycle (b) Operating efficiency
(c) Lead time (d) Business cycle (1)

13. **Assertion (A) :** The method of direct recruitment is very expensive as it involves heavy cost of advertising the vacancy.
Reason (R) : It is suitable for filling casual vacancies when there is a rush of work or when some permanent workers are absent.
(a) Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are correct but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is correct but Reason (R) is incorrect.
(d) Assertion (A) is incorrect but Reason (R) is correct. (1)

14. While the product costs set the lower limits of the price for a product, the upper limit of price which a buyer would be prepared to pay is decided by:
(a) Utility and demand of the product (b) The marketing manager of a firm
(c) The Government (d) The competitors of the firm (1)

15. What is the importance of consumer protection from the point of view of consumer?
(a) Protection against malpractices or exploitation of sellers
(b) Consumer awareness
(c) To organise consumers in the form of consumer organisations
(d) All of the above (1)

16. Statement I : Capital Budgeting decision involves investment of funds in long term projects.
Statement II : The size of assets, profitability and competitiveness are all affected by capital structure decisions.
(a) Both the Statement I and Statement II are true.
(b) Both the Statement I and Statement II are false.
(c) Statement I is true but Statement II is false.
(d) Statement I is false but Statement II is true. (1)

17. Swati has been given the task of arranging for five-day conference for foreign delegates. In order to ensure smooth functioning of the event, she has made two people as co-ordinators to take care of activities related to registration and refreshment. Identify the function of management being carried out by Swati.
(a) Planning (b) Organising (c) Staffing (d) Directing (1)

18. Match the following :

(i) Guideline for implementing a strategy	(a) Procedure
(ii) Prescribed way to carry out a particular task	(b) Policy
(iii) Series of steps to be performed in a chronological order	(c) Budget
(iv) Numerical plan	(d) Method

(a) (i)-(d); (ii)-(a); (iii)-(b); (iv)-(c) (b) (i)-(b); (ii)-(c); (iii)-(a); (iv)-(d)
(c) (i)-(b); (ii)-(d); (iii)-(a); (iv)-(c) (d) (i)-(c); (ii)-(a); (iii)-(d); (iv)-(b) (1)

Contd...3

19. Which of the following statements is incorrect?
(a) Leadership and motivation are the two elements of directing.
(b) Motivation creates goal directed behaviour
(c) All managers are leaders but all leaders are not managers.
(d) Directing is a wider concept than management. (1)

20. Inflexibility in operations is major limitation or disadvantage of which type of organisational structure?
(a) Formal (b) Informal
(c) Functional (d) Divisional (1)

21. Surya Pvt. Ltd. is looking for qualified and talented people to apply for vacant jobs in the organisation. With the passage of time the organisation has learned a lot with its experience. It knows that when it goes for final selection of candidates, it will have to design different tests. They want to test the employees on the basis of their learning and decision making ability. The company wants to ensure proper testing of the recruited candidates. After this the candidates will be judged on the basis of in-depth formal conversation. After the selection, the candidates are placed and trained. Employees have to be trained on the equipment they will be using but this training will take place away from the workplace.
(a) Which type of recruitment should the company depend on?
(b) Which type of test should be conducted by the organisation to suit their need?
(c) Which type of training is given to the candidates? (3)

22. Explain briefly any three factors affecting the fixed capital requirements.
OR (3)
Explain briefly any three factors affecting the dividend decision.

23. A company is manufacturing garments. The manager wants to increase profits by purchasing new high speed machines or increasing the sale price or using waste materials in manufacturing stuffed toys. He decided that 'using waste material' is the best solution for him.

(a) Identify the concept of management involved.
(b) State the steps of the concept of management highlighted above by quoting the lines. (3)

24. State any three points of importance of organising.
OR (3)
State the three essential elements of delegation.

25. Explain briefly any four rights of a consumer.
OR (4)
Explain briefly the three-tier machinery under the Consumer Protection Act, 2019 for redressal of consumer grievances.

26. Name the process of designing and maintaining an environment in which individuals working together in groups efficiently accomplish selected aims. Also explain three points highlighting its importance.
OR (4)
Initially 'Usha Ltd.' was producing grinder mixer. Now with the changing scenario and emerging trends of working women there is a greater demand for a product which is more efficient and multi-tasker. On analysing the situation, the company decided to penetrate into the market for producing Food Processor. Name the characteristic of management highlighted above. Also explain any three other characteristics of management.

27. Discuss the relationship between planning and controlling. (4)

28. India's craft heritage is surviving because of its customs and traditions. Craft products made by craftsmen of Rajasthan, Gujarat, Assam etc. are not only used in the country but are also exported to USA, Germany, UK, France and other countries of the world. The volume of exports of these products gives India an advantage in balance of payments and much needed foreign exchange. The Prime Minister desires that the handicraft industry should be expanded by linking it with technology. Focus should be on changing the manufacturing process, ensuring durability and adopting innovations. Quoting the lines from the above paragraph, explain any four dimensions of business environment. (4)

Contd...4

29. Ratocide Ltd. is a pesticide producing company. The company identifies the various types of activities to be done. For this it divides the work into various departments. The company then gets involved in its business with a lot of zeal. After one year of successful run, the company decides to transfer the decision- making authority to the lower most level of the employees. For this a major policy decision is taken.
(a) Identify the function of management and also another concept highlighted in the above case.
(b) Explain the next two steps of the function identified above.
(c) Explain any one importance of the concept identified above. (4)

30. Arunabh Mukherjee is the Finance manager of 'Sweatwear Ltd'. The company is engaged in the manufacturing of woollen clothes. The demand of the company's products is seasonal, whereas the production continues throughout the year. Due to the quality of its products, the company's business is spreading across the country. The performance of its each division is of very high level. For uninterrupted availability of raw materials, the company requires high stock levels. Not only this, to face the competition and to meet the urgent orders of the customers, the company also needs enough stock of finished goods. Quoting the lines from the above paragraph, explain any four factors affecting the working capital requirements of 'Sweatwear Ltd'. (4)

31. Explain briefly the steps involved in the trading procedure on a stock exchange.

OR (6)

Explain the regulatory and protective functions of SEBI.

32. Explain briefly the following principles of management.
(a) Scalar Chain (b) Centralisation and Decentralisation
(c) Initiative (d) Unity of Direction

OR (6)

Explain briefly the following principles and techniques of Scientific Management.
(a) Differential piece wage system (b) Time study
(c) Functional foremanship (d) Cooperation, not individualism

33. Reema intends to start an enterprise that produces chocolates. Initially, in order to assess the taste and preferences of the people about the chocolates, she used social media and online surveys. Thereafter, she prepared a detailed SWOT analysis of her enterprise to devise a strategy that will give her an edge over the competitors. Based on her analysis of the market, she decided to launch sesame and jaggery based chocolates under the brand name 'Choco Delicia'. She has decided to fix up the price of chocolates relatively at lower level in the beginning and later on as the demand picks up she may revise the prices.

In the context of the above case:
(a) Identify and explain the elements of marketing mix being taken into consideration by Reema.
(b) Explain briefly the functions of marketing highlighted here. (6)

34. Abhay runs a small dhaba on the National highway. He is very rigid and follows a strict policy of punishment like cutting the salary, stopping increments or giving job termination threats to his workers for any kind of discrepancies in their work. He does not seek advice or opinions from his workers, as he does not have any confidence on the competence of his workers. Also, the workers are not willing to offer useful suggestions as they do not expect any motivation or incentive for taking such initiatives. As a result, the labour turnover is high and his business has been adversely affected.

In the above context:
(a) Name and explain the style of leadership adopted by Abhay.
(b) Identify and explain the various human needs of workers that are being overlooked by Abhay as per the Maslow's need hierarchy theory of motivation.
(b) Identify and explain the type of communication barrier created by Abhay due to which the workers suppress their need to communicate with him. (6)

DELHI PUBLIC SCHOOL, BHILAI

DATE : 11.12.2023 **PREBOARD EXAMINATION, 2023-'24** **Time : 3 Hrs.**
CLASS : XII **SUBJECT – HOME SCIENCE** **Max. Marks : 70**

GENERAL INSTRUCTIONS

1. All questions are compulsory.
2. There are total 35 questions.
3. Question paper is divided into three sections-A, B and C.
4. Section A has question no.1 to 18 (Objective type questions) and are of 1 mark each.
5. Section B has question no. 19 to 25 of 2 marks each and question no.26 to 29 of 3 marks each.
6. Section C has question no.30 to 33 of 4 marks each and question no.34 and 35 are of 5 marks each.
7. Internal choices are given in some questions.
8. Support your answers with suitable examples wherever required.

SECTION A

01. Hot pant is an example of:
(a) Classic (b) Fashion (c) Fads (d) Style (1)

02. Which Article of the constitution of India guarantees equality of opportunity for all citizens in matters related to employment?
(a) Article 16(1) (b) Article 16(2) (c) Article 26(1) (d) Article 36(2) (1)

03. The sources of salmonella infection are:
(a) Fresh vegetables (b) Raw milk and eggs (c) Pulses (d) Contaminated Water (1)

04. The services offered by the staff at the front office include:
(i) Welcoming guests (ii) Cleaning of guest rooms
(iii) Organising reservation status (iv) Supply of laundry
Choose the correct option:
(a) i and iii (b) i and ii (c) ii and iv (d) ii and iii (1)

05. Which of the following methods was a significant advancement in ensuring microbiological safety of food in 1864?
(a) Pickling (b) Fermentation (c) Canning (d) Pasteurisation (1)

06. An individual who wishes to pursue a career in the field of development communication must possess:
(i) Money (ii) Cognitive skills (iii) Creative skills (iv) English language
Choose the correct option:
(a) i and iv (b) ii and iii (c) i and ii (d) iii and iv (1)

07. In grey scale 0 indicates:
(a) Black (b) White (c) Grey (d) Hue (1)

08. The final component of fashion merchandising is:
(a) Buying (b) Promoting (c) Selling (d) Exporting (1)

09. Your mother wants to purchase silver bangles. Which standardisation mark should she look for in them?
(a) FSSAI (b) Hallmark (c) Wool mark (d) ISI (1)

10. Which stage of the Fashion Cycle involves manufacturers copying fashion and preparing adaptations of it at many price levels?
(a) Decline at popularity (b) Increase in popularity
(c) Introduction of a style (d) Peak in popularity (1)

OR

Match the following:

List I	List II
A. Hotel	1. Offer lodging, meals
B. Motel	2. Offers amenities, sports facilities and leisure activities
C. Lodge	3. Provides parking facility near the room
D. Resort	4. Offers rented accommodation only for sleep

Choose the correct option from the following:
(a) A-1, B-2, C-3, D-4 (b) A-2, B-3, C-4, D-1
(c) A-1, B-3, C-4, D-2 (d) A-4, B-3, C-2, D-1

11. Ikat pattern is produced by dyeing at _____ of fabric production:
(a) Fabric stage (b)Fibre stage (c) Thread stage (d) Yarn stage (1)

Contd...2

12. **Given below are two statements labelled as Assertion (A) and reason (R).**

ASSERTION (A) : Right to safety under CPA, 1986 is taken from UN convention on consumer protection.
REASON (R) : Right to safety will ensure good quality of products to consumer. (1)

Select the most appropriate answer from the options given below:
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

13. **ASSERTION (A) :** ECCE incorporates ensuring physical, social, emotional, intellectual, health-related and education care and development.
REASON (R) : It aims at holistic development of a child. (1)

Select the most appropriate answer from the options given below:
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

CASE BASED QUESTIONS

Read the passage carefully and answer question no. 14 to18

According to the Harvard Business Review, the Taj Mumbai is one of the world's top hotels. Not only it is known for its beauty, but it is also known for having the well-trained employees who are always willing to go the extra mile. They even note that many of them have worked at the hotel for decades. There is never any question about the job to be done and how to meet the needs of the guests. While the Taj Mumbai is known for their excellent customer service, they took it to a new level during several terrorist attacks a decade ago, the employees never left their posts and made it their duty to protect their guests. They were quick thinking and thought of the safety of the guests before their own. Many of them even lost their lives.

So, you can see that the Taj Mumbai has created a customer-centred culture. Their employees know the customers come first, and they seem to enjoy this culture of service. Experts tend to agree that the recruiting system employed by the hotel has, helped them find the most ideal candidates to provide this extraordinary culture of service.

14. The Taj Mumbai is an example of:
(a) Hospitality industry (b) Hotel industry (c) Food industry (d) All of the above (1)

15. Who is responsible for dealing with the queries of the staff?
(a) Executive Housekeeper (b) Front Office Manager
(c) Telephone Operator (d) Front Office Agent (1)

16. While hiring the staff for hospitality industry the most important competency required in a candidate is _____.
(a) New ideas and latest gadgets (b) Aim to earn high monetary returns
(c) High energy to work for long hours (d) Clean and properly manicured nails (1)

17. Which of the following is a correct statement?
I. Hotel employees should always put the guest's needs before those of the hotel.
II. This empowers employees to take the right action at the right time.
III. Sometime guests complain unnecessarily so the hotel staff should avoid their complains

Choose the correct option from the following:
(a) I, II and III (b) I and II (c) II and III (d) None of these (1)

18. The Taj Mumbai has created_____.
(a) Customers-centred culture (b) Ignorant culture (c) Culture of service (d) Both (a) and (b) (1)

Contd...2

SECTION B
(SHORT ANSWER QUESTION)

19. Write in short about the stages of guest cycle. (2)

20. Define the term campaign. State it's two advantages. (2)

21. You want to design a dress for a party. How can you achieve rhythm and harmony in your dress? Explain in brief. (2)

OR

Mrs. Madhu wants to open a boutique. Help her to know about different kinds of shapes which should be considered while designing a dress.

22. "An analytical capability is pre-requisite of a fashion merchandiser". Justify this statement with two reasons. (2)

23. What do you understand by the term community radio? (2)

24. How packaging can be used as an effective marketing tool? (2)

25. Name any two high risk foods. (2)

OR

Explain pulsation as a method of washing clothes, to your mother.

26. Give full forms of following international organisations. Also write about the areas in which they deal.
(i) CAC (ii) ISO (iii) WTO (3)

27. France's dominance over international fashion began in the early 18th century.' Mention the developmental changes in fashion until the Industrial Revolution. (3)

28. As a health worker you noticed that most of the children in the village have pale yellowish skin.
(i) What do you think they are suffering from?
(ii) Which two government programmes are operational in our country, for such children? (3)

OR

What do you understand by the term food-based strategy? Enlist any two food-based strategies you may adopt to tackle public nutrition problems.

29. Discuss the issues and concerns related to women at work. (3)

SECTION C
(LONG ANSWER QUESTION)

30. What do you understand by the statement that 'to interpret consumer demand, one should understand target market and customer motivations? Elaborate in brief. (4)

31. Demonstrate any four-colour harmony of contrasting colour scheme (4)

32. (a) What is the difference between Consumer Forum and Footfalls?
(b) "Inadequate information given by manufacturer is common problem amongst the consumer". Support this statement with two examples. (4)

33. Enlist the nutritional programmes operating in India. (Any 4) (4)

OR

After completing master's degree in Food and Nutrition, Riya wants to pursue her career in the field of nutrition. Suggest her the career avenues where she can work as a nutritionist.

34. What do you know about RRE? Write in detail (5)

35. (i) Most of the families have their own iron. Which type of irons are generally used?
(ii) You are working in a hi-tech laundry of a hotel.
(a) What four factors will you keep in mind before choosing the process of washing a fabric?
(b) You are using a dryer to dry the washed fabric. Explain the two types of circulation system in a dryer. (5)

OR

What do you understand by the term 'Standardisation Mark' and on what basis are these marks given? Which three standardisation marks are commonly followed in India for food products and for which food products are they given?

DELHI PUBLIC SCHOOL, BHILAI

DATE : 11.12.2023 **PREBOARD EXAMINATION 2023-'24** **Time : 3 Hrs.**

CLASS : XII **SUBJECT – INFORMATICS PRACTICES (065)** **Max. Marks : 70**

General Instructions

1. This question paper contains five sections. Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 mark.
4. Section B has 07 very short answer questions carrying 02 marks each.
5. Section C has 05 short type questions carrying 03 marks each.
6. Section D has 02 questions carrying 04 marks each.
7. Section E has 03 questions carrying 05 marks each.
8. All programming questions are to be answered using Python Language only.

Section – A

1. Intentionally kept traces of activities done over the web are called……. [1]
   a. Passive digital footprint b. data prints c. digital trace back d. active digital footprint

2. Sudha found her image attached to an unknown person and published in a social networking site. What should she do? [1]
   a. Complain the cyber crime cell b. Ignore it
   c. Upload more pictures of herself d. Try to contact the sources.

3. While creating a Series, the number of values …….. [1]
   a. should be same as number of indexes b. can be more than number of indexes
   c. can be less than number of indexes d. Both (a) and (b)

4. Selling of software illegally for temporary use as rent basis is called…… . [1]
   a. Renting b. Softlifting c. Downloading d. Counterfeiting

5. Which of the following returns only date part from the given data/time arguments? [1]
   a. Data() b. curdate() c. datecur() d. None of these

6. Which of the following can not be used to access data from a DataFrame ? [1]
   a. loc() b. iloc() c. head() d. getdata()

7. Aswita's computer system was not working due to a problem in the CPU, What should she do with it ?
   a. Dispose the entire set and buy a new one
   b. keeping the usable components dispose the unused parts of an eWaste recycler
   c. Dispose the system casually anywhere
   d. Give it to her sister to play [1]

8. The 'T' property can be used on [1]
   a. Series b. DataFrame c. Both (a) and (b) d. invalid parameter

9. Use of electronic means to perform business transactions are related to [1]
   a. E-Commerce b. e-Business c. Both (a) and (b) d. all of these

10. What will be returned by the given query? [1]
    SELECT INSTR('Train your mind to see the good in every situation.','mind');
    a. 11 b. 12 c. 13 d. error

11. …… Is a text based web browser? [1]
    a. Opera b. Linux c. Safari d. All of these

12. Which of the following function converts the character of an argument string to the upper case character? [1]
    a. Ucase() b. upper() c. Both (a) and (b) d. None of these

13. Firewalls are …… . [1]
    a. Software that destroys viruses b. Commercial software
    c. utility that filters the entry of malwares d. cleaner softwares

14. Chose the correct query to display the length of customer's name (CNAME) from customers table. [1]
    a. Select length(cname) from customers;
    b. Select len(cname) from customers;
    c. Select size(cname) from customers;
    d. Select count(cname) from customers;

Contd…2

15. Which clause is used with aggregate function ? [1]
a. GROUP BY b. SELECT c. WHERE d. Both (a) and (b)

16. Which function only removes the trailing space from the characters of a string passed to an argument? [1]
a. Trim() b. Ltrim() c. Rtrim() d. Both (a) and (b)

17. **Assertion (A) :** The internet is world wide collection of networked computers, which can exchange information with each other very quickly. [1]
Reason(R) : A gateway is a device that connect dissimilar networks.
a. Both A and R are true and R is the correct explanation of A.
b. Both A and B are true but R is not the correct explanation of A.
c. A is true but R is false
d. A is false but R is true.

18. **Assertion (A) :** Data Visualization refers to the graphical representation of information and data are visual elements like charts, graphs and maps etc. [1]
Reason (R) : To install matplotlib library, we can use the command pip install matplotlib.
a. Both A and R are true and R is the correct explanation of A.
b. Both A and B are true but R is not the correct explanation of A.
c. A is true but R is false
d. A is false but R is true.

Section – B

19. Define **VoIP**. Also, Explain its one advantage. [2]

OR

Explain any two advantages of Internet.

20. Aashi is a travel agent; she has stored the data of all passengers in a table Travel (p_no, p_name, t_date, kms, coach). She has given the following command to display the name of the travelers whose travel date is in the year 2016. She is encountering an error while executing the following query: [2]
Select p_name, t_date where t_date = '2016' from travel;
Help her in identifying the reason of the error and write the correct query by suggesting the possible error(s).

21. Reena wants to find the output of the following queries using **substr()** and **mod()** functions. Help her to find the ouput. [2]
(i) **select substr('testcases',-5,3);**
(ii) **select mod(17.7,3);**

22. The Python code written below has syntactical errors. Rewrite the correct code and underline the corrections made. [2]

```
import pandas as pd
data = { 'Name': ['Riya', 'Preeti', 'Neeta'], 'Age':[25,30,22]}
df = pd.DataFrame(data)
for row in df:
        print(row)
```

23. Intellectual property rights means the person who produces the information is the only one who can use that information. Now, explain the need of protecting **Intellectual Property Rights**. [2]

24. Answer the following questions based on the Series given below: [2]

```
import pandas as pd
List1 = [1,2,3,4,5,6,7,8]
List2 = ['Swimming', 'tt', 'skating', 'kho kho', 'bb', 'chess', 'football', 'cricket']
School = pd.Series(List1, index = List2)
```

What will be the output of the following statements?
(a) **print(School*2)**
(b) **print(School['tt'])**

25. Complete the given Python code to concatenation the DataFrames 'df1' and 'df2' vertically and display the resulting DataFrame. [2]

```
import ..... as pd
df1 = pd.DataFrame({'A':[1,2,3], 'B':[4,5,6]})
df2 = pd.DataFrame({'A':[7,8,9], 'B':[10,11,12]})
result_df = pd..... (.....)
print(result_df)
```

Contd...3

Section – C

26. Consider the given table Order: [3]

Table:Order

orderno	Orderdate	Cname	Cloc	Orders	Payments
1	12/02/2009	Avion	Delhi	100000	90000
2	21/11/2008	Parason	Jaipur	230000	230000
3	15/10/2008	Trident	Raipur	120000	100000
4	31/01/2008	Avion	Jaipur	240000	240000
5	17/07/2008	Trident	Delhi	340000	310000
6	16/06/2008	Nalco	Chennai	140000	140000

i. Write the SQL statements for the following based on above table order.
ii. Find the average of Payments by Cloc Jaipur.
iii. List all orders between 01/01/2008 to 12/10/2008.

OR

Which type of MYSQL function accepts only numeric values? What is the use of such functions? Give the names of some functions of that type.

27. Write a Python code to create a DataFrame with appropriate column headings from the list given below: [3]

[['P01', 'SACHIN', 'INDIA'], ['P02', 'BRIAN LARA, 'West Indies'], ['P03', 'Wasim Akram', 'Pakistan'], ['P04', 'Adam Gilchrist', 'Australia']]

28. Rachita, a student of class XII, has been assign a code to create a pandas Series 'S1' as shown below:[3]

A 100
B 200
C 300
D 400
E 500

Help her to write the Python statements for the following:
a. To extract the value with the index 'C'.
b. Display the series by adding 10 in each value.
c. Delete the value against index 'D'

29. Ashwin has to prepare a project on **'Swachh Bharat Shreshth Bharat'**. He decided to get information from the Internet. He downloads three web pages (webpage1, webpage2, webpage3) containing information on the given topics: [3]
a. He reads a paragraph from webpage1 and rephrased it in his own words. He finally pasted the rephrased paragraph in his project.
b. He downloaded three images from webpage2. He made a collage for his project using these images.
c. He also downloaded an icon from a webpage3 and pasted it on the front page of his project report.
Now, answer the following:

i. Step 1 an example of .....
ii. Step 3 an act of .....
iii. The process of getting webpages, images and files from the webserver to a local computer is called .....

OR

What is **Cyber Stalking**? Is Cyber Stalking a crime? How Cyber Stalking messages are different from ordinary Spam.

30. Consider the following table Book: [3]

Table: Book

CODE	TITLE	AUTHOR	PUBLICATION	PRICE
D001	PHYSICS	VIKASH SHARMA	BPB	250
D002	CHEMISTRY	PREETI GOEL	MGH	300
D003	COMPUTER SCIENCE	SWATI RANA	NLP	275
D004	ENGLISH	SANJEEV JAIN	BPB	150
D005	MATHEMATICS	RAJIV RASTOGI	MGH	400

Give the output of the following SQL commands on the basis of the above table BOOK:
i. SELECT LEFT(PUBLICATION,1) FROM BOOK WHERE PRICE >280;
ii. SELECT LCASE(AUTHOR) FROM BOOK;
iii. SELECT SUBSTR(TITLE,2,3) FROM BOOK WHERE CODE = 'D002';

Contd...4

Section – D

31. **Army Hospital Bilaspur** maintains the following table for its patients. They want specific outputs department wise – like the average charges, total number of patients department-wise etc. As a database programmer, please help them to get the required outputs using MYSQL command. [4]

Table : HOSPITAL

PATID	PNAME	DEPT	CHAGES
P01	MAMTA	ENT	5600
P02	SAKET	EYE	7000
P03	RUCHI	ORTHO	2500
P04	AMAN	ORTHO	9000
P05	MEHTAB	ENT	4000
P06	PRERNA	ORTHO	5000

a. Display each Dept and the total number of patients in each dept.
b. Display the department-wise average charges.
c. Display total number of unique departments.
d. Display the minimum charges among patients whose name starts with 'S' or 'R'.

32. Ms. Chetali wants to create a DataFrame 'Football' and perform some operations with it. [4]

Football

Index	Player	Club	Changes
0	Ronaldo	AC Milan	9.6
1	Pele	Real Madrid	10.5
2	Maradona	Royal Argentina	19.5

(Assume pandas is imported as pd)

i. Write the output form the following:
   a. **Football['Charges']/2**
   b. **Football.size**

ii. Help her to write the code for the following:
   To set the index as 'R', 'P' and 'M' respectively for the three rows.

iii. To change index label of Football from 0 to ZERO and 1 to ONE.

OR

To make all the charges to 11.9

Section – E

33. Carefully Observe the following table named 'Stock'.

Table: STOCK

Pid	Pname	Category	Qty	Price
1	Keyboard	IO	15	450
2	Mouse	IO	10	350
3	Wifi-router	NW	5	2600
4	Switch	NW	3	3000
5	Monitor	O	10	4500
6	Printer	O	4	17000

[5]

Write SQL queries for the following:

i. To display the records in descending order of Price.
ii. To display Category and Category wise total quantities of products.
iii. To display the category and category and its average Price.
iv. To display Category and Category-wise highest Price of the products.
v. To display product names of the items with price below 200 and quantity less than 5.

OR

Briefly explain the purpose of the following SQL functions:\
i. Power() **ii. Mod()** **iii. now()** **iv. Month()** **v. length()**

Contd...5

35. **'Mia Bella'** – start-up fashion house has set up its main centre at Kanpur, Uttar Pradesh for its dress designing, production and dress supplying activities. It has four blocks of buildings: [5]

Admin Block (A)

Production Block (P)

Supply Block (S)

Design Block (D)

Distance between the various blocks:

A to D	50 m
A to P	60 m
A to S	110 m
D to S	60 m
P to S	50 m
P to d	150 m

Number of Computers in each block:

Block A	30
Block D	100
Block P	25
Block S	10

Based on the above specifications, answer the following questions:

i. Out of LAN, WAN, and MAN, what type of network will be formed if we interconnect different computers on the campus? Justify.

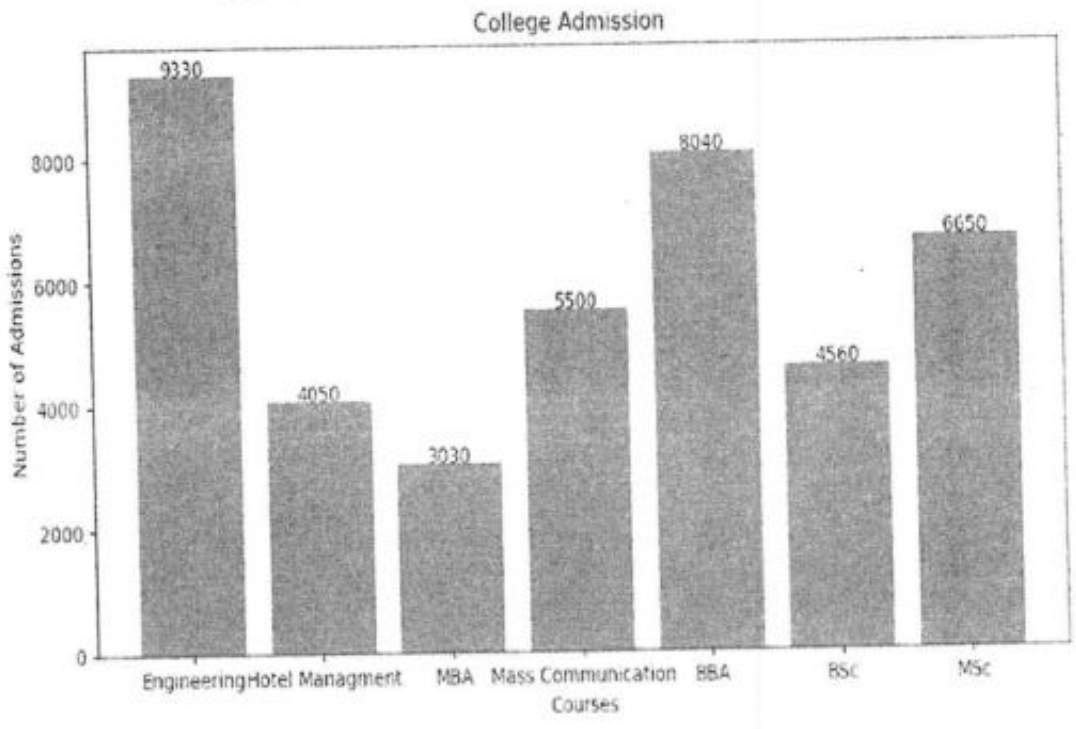
ii. Suggest the Topology, which should be used to efficiently connect various blocks of buildings within Kanpur centre for fast communication.
Also, draw the cable layout for the same.

iii. Suggest the placement of the following devices with justification.
(a) Repeater (b) Switch/Hub

iv. Now-a-days video conferencing software is being used frequently by the company to discuss the product details with the clients. Name any one Video conferencing software.

v. Suggest the suitable place (BLOCK) to house the server with a suitable reason.

35. Consider the following graph. Write Python code to plot it. [5]



DELHI PUBLIC SCHOOL, BHILAI

DATE : 15.12.2023 | **PREBOARD EXAMINATION 2023-'24** | **Time : 3 Hrs.**

CLASS : XII | **SUBJECT – ENGINEERING GRAPHICS** | **Max. Marks : 70**

General Instructions:

i. Attempt all questions. Give your answer according to question.
ii. Internal choice is given in some questions.
iii. Use both side of drawing sheet if necessary.
iv. All dimensions are in mm.
v. Missing and mismatching dimension if any may be suitably assumed.
vi. Follow the SP: 46-2003 revised codes with first angle method of projection.

Q 1 to Q 8 Answer the following multiple choice questions. Print the correct choice on your drawing **(1×8=8)**

1. Which one among the following methods cannot produce 'One plane/pictorial' drawings?
   (a) Isometric Projection (b) Perspective Projection
   (c) Oblique Projection (d) Orthographic Projection

2. _____ resembles an inverted solid.
   (a) A cone filled with ice-cream (b) A glass prism
   (c) Pyramid of Giza (d) A cylindrical glass tumbler

3. Match the LIST I with LIST II

LIST I	LIST II
1. GIB & COTTER JOINT	(i) Used for joining two circular rods
2. SLEEVE & COTTER JOINT	(ii) used for supporting horizontal shaft
3. OPEN BEARING	(iii) used for joining two pipes.
4. FLANGE PIPE JOINT	(iv) used for joining two square rods.

   (a) 1-iv, 2-i, 3-ii, 4-iii (b) 1-i, 2-ii, 3-iii, 4-iv (c) 1-iv, 2-iii, 3-ii, 4-I (d) 1-i, 2-iii, 3-iv, 4-ii

4. A gasket in Flange Pipe Joint is provided to
   (a) align the two flanges. (b) check leakage of fluid in pipes.
   (c) support the nuts and bolts. (d) fill the gap between the flanges.

5. The joint used for tightening of electric overhead wires is
   (a) Spigot and Socket Joint (b) Turn Buckle / Tie Rod Joint
   (c) Gib and Cotter Joint (d) Knuckle Joint

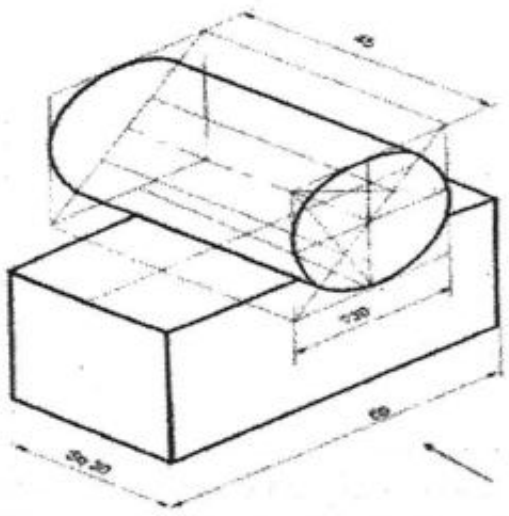
6. CRS in Open Bearing stands for
   (a) Centre to centre distance (b) Edge to edge distance
   (c) Corner to corner distance (d) Top to bottom distance

7. P.C.D. in flange pipe joint means
   (a) Pitch corner diameter (b) Pitch counter distance
   (c) Pitch centre distance (d) Pitch circle diameter

8. Usually taper in cotter is given as
   (a) 1 in 10 (b) 1 in 20 (c) 1 in 30 (d) 1 in

Q 9 to Q 15 – Select the correct option corresponding to the orientation of the given Isometric Projection: **(1×7=7)**

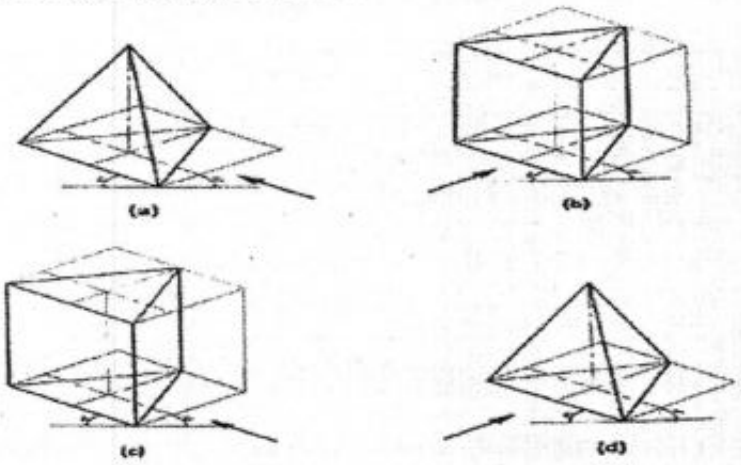
9.



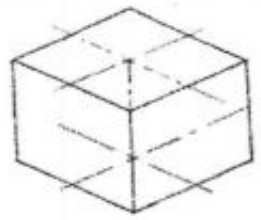
   (a) A horizontal solid placed on a vertical solid
   (b) A horizontal solid placed on a horizontal solid
   (c) A vertical solid placed on a horizontal solid
   (d) A vertical solid placed on a vertical solid

Contd...2

10. Which figure among the following correctly represents a triangular prism whose axis is perpendicular to H.P and one of its base edges is parallel to V.P.?



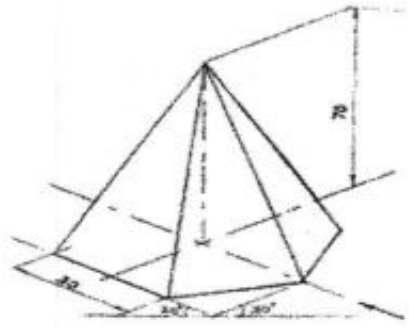
11. Select the correct statement/s for the given figure



(A) All the edges are non-Isometric lines.
(B) All the edges are isometric lines.
(C) All the faces are seen as foreshortened.
(D) All the faces are seen as triangles.

(a) A & C only
(b) B & D only.
(c) B & C only
(d) A & D only

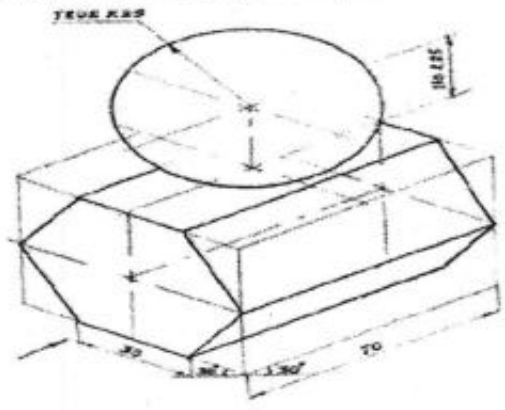
12. Select the correct statement/s for the given figure



A. Two of the base edges which are parallel to each other are parallel to VP.
B. The solid is resting on HP with its axis parallel to VP
C. Two of the base edges which are parallel to each other are perpendicular to VP
D. The solid is resting on HP with its axis perpendicular to VP

(a) A and B only.
(b) B and C only
(c) C and D only
(d) D and A only

13. Choose the incorrect statement/s for the given figure

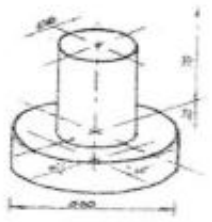


A. A sphere of diameter 50mm is placed on a horizontal hexagonal prism with hexagonal ends II to VP
B. A sphere of radius 25mm is placed on a horizontal hexagonal pyramid with hexagonal ends II to VP
C. A sphere of radius 25 mm is placed on a horizontal hexagonal prism with its axis perpendicular to VP
D. A sphere of diameter 50mm is placed on a horizontal pentagonal prism with its axis perpendicular to VP

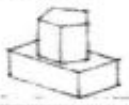
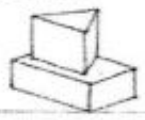
(a) A only
(b) C only
(c) B and C only
(d) B and D only.

Contd...3

14. Select the top view of the given combination of solids. (NOTE: Top views are not drawn to scale.)



15. Match the LIST I with LIST II

LIST I: ISOMETRIC PROJECTION OF SOLIDS	LIST II:TOTAL NUMBER OF RECTANGULAR SURFACE(S)
1. Pentagonal prism kept on a square prism 	(i) six
2. pentagonal prism kept on a pentagonal slab 	(ii) seven
3. Triangular prism kept on a triangular slab 	(iii) nine
4. Triangular prism kept on a square prism 	(iv) ten

Q16 to Q 20 – Read the following paragraph and answer the following questions. **(1×5=5)**

Two friends who are the students of class XII Engg. Graphics had to fix the problems in their bike during the summer vacation. While purchasing the spare parts at a machinery shop, they observed a machine part similar to bolt. They sent the following image of that machine part to their Engg. Graphics teacher. Then the teacher explained everything about that part, which is called as stud.

16. Which category does the stud belong to?
    (a) Permanent fastner (b) Permanent bearing (c) Temporary fastener (d) Temporary bearing
17. Stud is a
    (a) Headless bolt (b) Headless key (c) Square headed bolt (d) Hexagonal headed bolt
18. Name the shape of the central portion of the above figure
    (a) Collar (b) Web (c) Cover (d) Rod
19. What is the outer diameter of the central portion of the above figure, when'd' is the diameter of stud?
    (a) 0.8 d (b) d (c) 1.1 d (d) 1.5 d
20. What is the length of the metal end of a stud with 20mm diameter?
    (a) 46mm (b) 43mm (c) 20mm (d) 16mm

Contd...4

21.(a) Construct an isometric scale. **(5)**

(b) Draw the isometric projection of a hexagonal prism (base edge 25 mm, axial length 60mm) resting on its face with its axis parallel to H.P. and V.P. both. Indicate the direction of viewing. Give all the dimensions. **(10)**

22. Draw to scale 1:1, the standard profile of Metric thread (Internal) with the enlarged pitch = 50 mm. Give standard dimensions. **(8)**

OR

Draw to scale 1:1, the front view and top view of a Hexagonal nut across flat, the diameter is given as 25 mm. The axis of the nut is vertical. Give the standard dimensions. **(8)**

23. Figure 1 shows the details of the parts of a Bushed Bearing is shown. Assemble these parts correctly and then draw to scale 1:1 its following views:-

(a) Sectional front view, right half in section. **(14)**

(b) Side view looking from left. **(07)**

Print the title and the scale used. Draw the projection symbol. Give 6 important dimensions. **(06)**

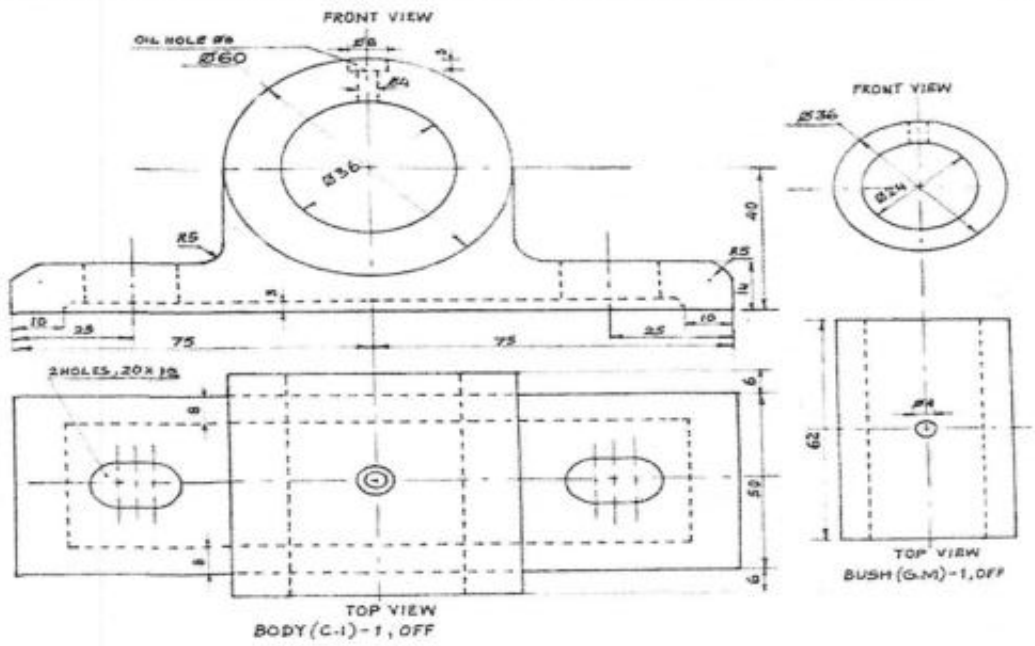


Figure 1

Figure 2 shows the assembly of a 'Gib and Cotter Joint'. Disassemble the parts correctly and then draw to scale 1:1 its following views of the following components. Keeping the same position with respect to H.P and V.P. as given:

(a) FORK END (i) Front View, Upper half in section. **(9)**

(ii) Top View. **(6)**

(b) GIB (i) Front View. **(4)**

(ii) Side View. **(2)**

(c) Print the titles of both and scale used. Draw the projection symbol. Give 6 important dimensions. **(6)**

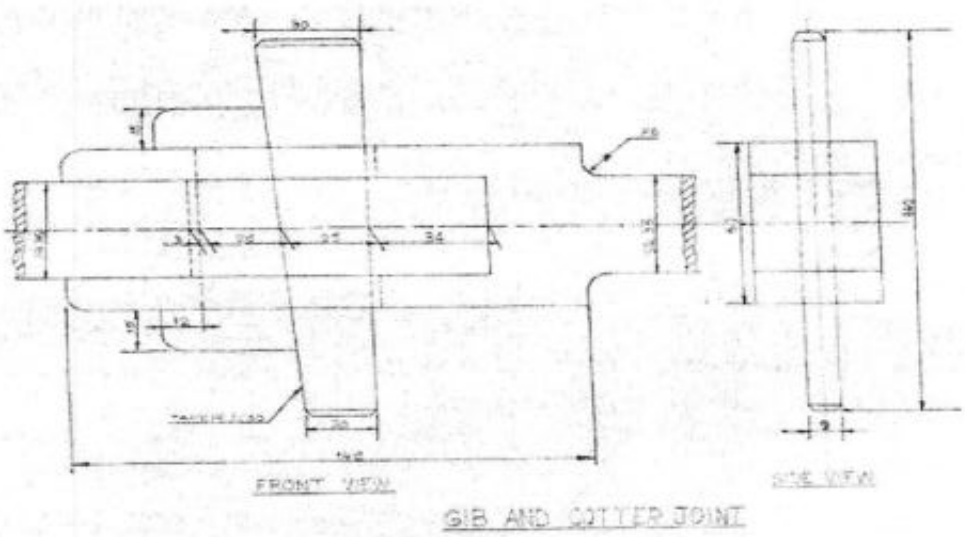


Figure 2

ꕥꕥꕥ ꕥꕥꕥ

DELHI PUBLIC SCHOOL, BHILAI

DATE : 15.12.2023 | **PREBOARD EXAMINATION 2023-'24** | **Time : 3 Hrs.**

CLASS : XII | **SUBJECT – PHYSICAL EDUCATION (048)** | **Max. Marks : 70**

General Instructions :

(1) The question paper consists of 5 sections and 34 questions.
(2) **Section A** consists of question **1-18 carrying 1 mark** each and is **multiple choice questions**. All questions are compulsory.
(3) **Section B** consists of questions **19-23 carrying 2 marks each** and are **very short answer types** and should not exceed 60-90 words. There is internal choice available.
(4) **Section C** consist of questions **24-28 carrying 3 marks each** and **are short answer types** and should not exceed 100-150 words. There is internal choice available.
(5) **Section D** consist of question **29-31 carrying 4 marks each** and are **case studies**. There is internal choice available.
(6) **Section E** consist of question **32-34 carrying 5 marks each** and are **short answer types** and should not exceed 200-300 words. There is internal choice available

Section – A

Q.1 Identify the asanas : **(1)**

(a) Halasana (b) Pachimottanasana (c) Tadasana (d) Bhujangasana

Q.2 Person with ..... tends to be sympathetic trust, cooperate and modest under which big five theorgy ? **(1)**
(a) Neuroticism (b) Extraversion (c) Conscientiousness (d) Agreeableness

Q.3 Khelo India fitness test in school is for which of the following age groups? **(1)**
(a) 5 – 8 years (b) 9 – 18 years (c) 12 years onwards (d) Both (a) and (b)

Q.4 Which of the following is not the projectile trajectory? **(1)**
(a) Cricketer hitting six (b) In volleyball follows parabolic motion
(c) when Basketball is thrown into the basket (d) An aircraft taking off

Q.5 Which of the following training methods develops endurance? **(1)**
(a) Isometric Method (b) Isotonic Method (c) Fartlek Method (d) Pace Run Method

Q.6 Sideways curvature of the spine is known as **(1)**
(a) Round Shoulder (b) Kyphosis (c) Scoliosis (d) Lordosis

Q.7 Causes of osteoporosis in female Athletes is/are : **(1)**
(a) Menopause (b) Low Calcium intake (c) High Calcium intake (d) Both (a) and (b)

Q.8 Newton's 1st Law of Motion is known as ..... . **(1)**
(a) Law of Acceleration (b) Law of Inertia
(c) Law of Action-Reaction (d) All of these

Q.9 The resistance ability against fatigue is called ..... . **(1)**
(a) Strength (b) Speed (c) Endurance (d) Flexibility

Q.10 ..... is known as complete diet. **(1)**
(a) Fish (b) Potato (c) Milk (d) Apple

Q.11 Given below are two statements labelled Assertion (A) and Reason (R).
Assertion (A) : Planning should be the first step for organizing a tournament.
Reason (R) : A tournament can be conducted without planning. **(1)**

In the context of the above two statements, which one of the following is correct?
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Contd...2

Q.12 Match List – I with List – II and select the correct answer. (1)

List – I	List – II
1. Speed	(i) 600 Meter Run
2. Flexibility	(ii) 50 Meter standing start
3. Strength	(iii) Sit and reach
4. Endurance	(iv) Push-ups

Codes :

	1	2	3	4
(a)	(i)	(iii)	(iv)	(ii)
(b)	(ii)	(iii)	(iv)	(i)
(c)	(i)	(iv)	(iii)	(ii)
(d)	(ii)	(iv)	(iii)	(i)

Q.13 Lowering the centre of gravity increases balance and stability in sports. (1)
(a) True (b) False (c) Weight is evenly distributed (d) None of them

Q.14 A fracture of the bone only, without damage to the surrounding tissues or breaking of the skin. (1)
(a) Simple Fracture (b) Green Stick Fracture
(c) Communicated Fracture (d) Compound Fracture

Q.15 Cartwheel in Gymnastics is an example of ..... . (1)
(a) Static equilibrium (b) Dynamic equilibrium (c) Active flexibility (d) Passive equilibrium

Q.16 The International Paralympics Committee was founded in the year : (1)
(a) 1990 (b) 1948 (c) 1900 (d) 1989

Q.17 Which among these asanas is helpful in increasing height? (1)
(a) Sukhasana (b) Tadasana (c) Bhujangasana (d) Vajrasana

Q.18 Match the following (1)

Column I	Column II
(A) Kinetic friction	(i) Volleyball player pushes the ball slowly for a drop.
(B) Law of Inertia	(ii) Two objects are moving relative to each other.
(C) Take off high jump	(iii) 3rd Law of Motion
(D) Second law of motion	(iv) Ball at rest

(a) A – (ii), B – (iv), C – (iii), D – (i)
(b) A – (iv), B – (ii), C – (iii), D – (i)
(c) A – (iv), B – (ii), C – (i), D – (iii)
(d) A – (iii), B – (ii), C – (iv), D – (i)

Section – B

Q.19 What is goal setting? (2)

Q.20 Write about the Paralympic Committee of India. (2)

Q.21 What is friction? Write its advantages. (2)

Q.22 Define Staffing. How it is important? (2)

Q.23 What is flexibility? (2)

OR

Enlist the items of Khelo India Fitness Test and explain the procedure of the test taken to check the endurance.

Section – C

Q.24 Write briefly about the prevention and management of 'Anorexia'. (3)

Q.25 What is Endurance? (3)

Q.26 What is self esteem? Explain its types. (3)

Q.27 What are the aims and objectives of Deaflympics? (3)

Q.28 Describe the senior citizen fitness test. (3)

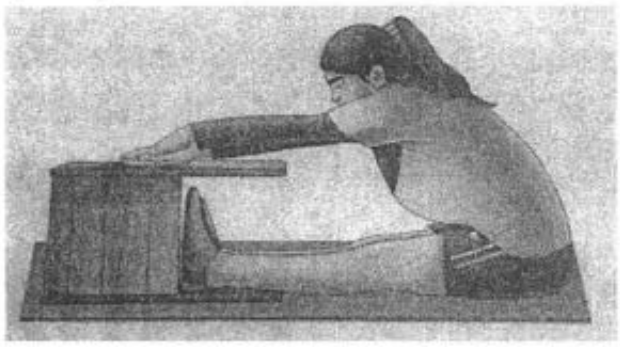
OR

Define fracture and explain **any two** types of fracture.

Contd...3

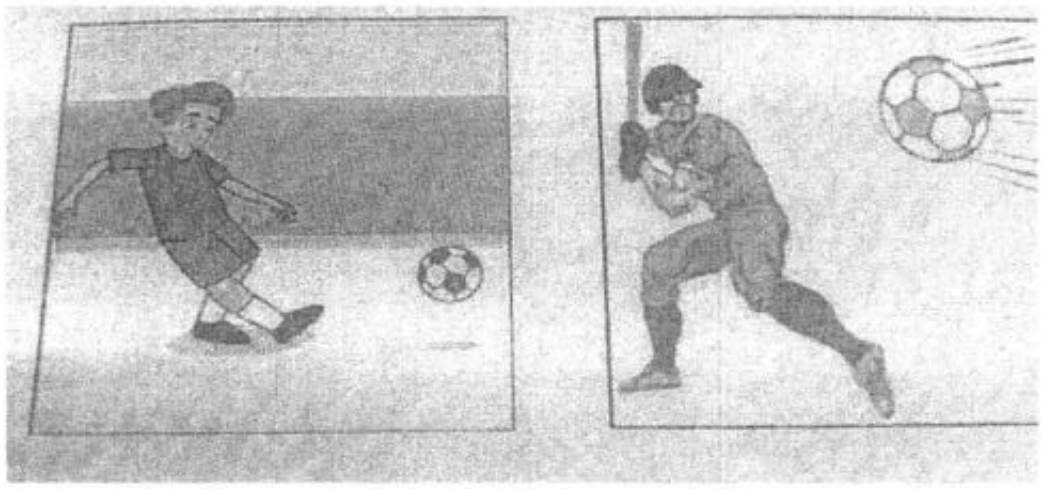
Section – D

Q.29 Identify the types of test and answer the following questions : **(4)**



(a) Name the test ..... .
(b) The above test measure which component.
(c) This test is designed for which age group.....
(d) What is the height of Box?

Q.30 The teachers as well as coaches always make their best efforts to improve the performance of their students in various competitive games and sports. They can help to improve the performance of students if they have adequate knowledge of Biomechanics. **(4)**



(a) The more force one exerts on the downward bounce, the higher the ball bounces into the air. Which law in this statement being referred to ?
(b) Among the above given pictures, Newton's 3rd Law is depicted in ..... .
(c) Newton's Second Law is also known as ..... .
(d) The study of human movement is called ..... .

OR

(d) A high jumper can jump higher off a solid surface because it opposes his/her body with as much force as he/she is able to generate. This example refers to which law of motion?

Q.31 Preeti, a student of Class XII joined Zumba Aerobics Class, near her house. Her fitness is poor because of which she keeps talking intervals in between. Her Gym trainer advised her to consult some good nutritionist and also advised her to increase protein intake in her diet. **(4)**

(a) Name any two food items which are rich in Proteins.
(b) Proteins are also known as ..... .
(c) The daily requirement of Protein in our diet is about ..... .
(d) What should be the basic nutrient in weight lifters diet?

OR

(d) One gram of Protein Contain ..... Calories.

Section – E

Q.32 Explain the soft tissue injuries and its types. **(5)**

Q.33 Compare any three Fat Soluble Vitamins on the basis of their sources and benefits. **(5)**

Q.34 Make a fixture of 19 teams on the basis of knock-out tournament. **(5)**

OR

Make a fixture of 8 teams on the basis of league tournament staircase method.