



**General Instructions :**

- The question paper is divided into 3 sections: A, B and C.
- All the questions are compulsory.
- Specific instructions wherever necessary are given. Follow them carefully.

**Section A : Reading Skills (20 Marks)**

**Q1. Read the passage given below and answer the questions that follow: (12 Marks)**

1. A fisherman, enfeebled with age, could no longer go out to sea so he began fishing in the river. Every morning he would go down to the river and sit there fishing the whole day long. In the evening he would sell whatever he had caught, buy food for himself, and go home. It was a hard life for an old man. One hot afternoon while he was trying to keep awake and bemoaning his fate, a large bird with silvery feathers alighted on a rock near him. It was Kaha, the heavenly bird. "Have you no one to care for you, grandpa?" asked the bird. "Not a soul." "You should not be doing such work at your age," said the bird. "From now on I will bring you a big fish every evening. You can sell it and live in comfort." True to her word, the bird began to drop a large fish at his doorstep every evening. All that the fisherman had to do was take it to the market and sell it. As big fish were in great demand, he was soon rolling in money. He bought a cottage near the sea, with a garden around it and engaged a servant to cook for him. His wife had died some years earlier. He had decided to marry again and began to look for a suitable woman.
2. One day he heard the royal courtier make an announcement. "Our king has news of a great bird called Kaha," said the courtier. "Whoever can give information about this bird and help catch it, will be rewarded with half the gold in the royal treasury and half the kingdom!" The fisherman was sorely tempted by the reward. Half the kingdom would make him a prince!
3. "Why does the king want the bird?" he asked. "He has lost his sight," explained the courtier. "A wise man has advised him to bathe his eyes with the blood of Kaha. Do you know where she can be found?" "No...I mean ...no, no..." Torn between greed and his sense of gratitude to the bird, the fisherman could not give a coherent reply. The courtier, sensing that he knew something about the bird, informed the king. The king had him brought to the palace.
4. "If you have information about the bird, tell me," urged the king. "I will reward you handsomely and if you help catch her, I will personally crown you king of half my domain." "I will get the bird for you," cried the fisherman, suddenly making up his mind. "But Kaha is strong. I will need help." The king sent a dozen soldiers with him. That evening when the bird came with the fish, the fisherman called out to her to wait. "You drop the fish and go and I never get a chance to thank you for all that you've done for me," he said. "Today I have laid out a feast for you inside. Please alight and come in." Kaha was reluctant to accept the invitation, but the fisherman pleaded so earnestly that she finally gave in, and alighted. The moment she was on the ground, the fisherman grabbed one of her legs and shouted to the soldiers hiding in his house to come out. They rushed to his aid but their combined effort could not keep Kaha down.
5. She rose into the air with the fisherman still clinging onto her leg. By the time he realized he was being carried away, the fisherman was too high in the air to let go. He hung on grimly, and neither he nor Kaha were ever seen again.

**1.1 On the basis of your understanding of the above passage, answer each of the questions given below by choosing the most appropriate option: (1x4=4)**

**(a) Why was the king desperately looking for Kaha the bird?**

- i. The king wanted a pet bird.
- ii. A wise man advised the king to capture the bird for good luck.
- iii. Kaha was the only heavenly bird with silvery feathers.
- iv. The king was blind and required Kaha's blood for his eyes.

**(b) Why did the bird volunteer to bring fish for the old man?**

- i. The old man was inexperienced at fishing.
- ii. The bird took pity on the old man and wanted to help him.
- iii. The bird had caught more fish than required.
- iv. The bird wanted to make the old man rich.

**(c) What led the courtier to sense that the fisherman might know something about Kaha ?**

- i. The courtier had observed Kaha alight at the fisherman's house every evening.
- ii. The courtier had seen the fisherman talk to Kaha.
- iii. The fisherman fumbled when asked about Kaha.
- iv. Word went around that the fisherman was in contact with Kaha.

**(d) Which of the following is not true about Kaha ?**

- i. Kaha was a very considerate bird
- ii. The blood of Kaha was precious.
- iii. Kaha was a strong bird.
- iv. Kaha saved the fisherman from the King's wrath.

**1.2 Answer the following questions briefly:**

**(1x6=6)**

- a. Why did the fisherman stammer when asked if he knew about the bird ?
- b. How did the fisherman get Kaha to come down ?
- c. What does the phrase 'rolling in money' in the passage refer to ?
- d. Why was the fisherman doubtful about revealing information about Kaha to the courtier ?
- e. Mention two traits of farmer's character revealed through the story.
- f. How did the bird manage to escape?

**1.3 Pick out the words/phrases from the passage which are opposite in meaning to the following:**

- a. Took off (Para 1)
- b. Released (Para 4)

**(1x2=2)**

**Q2. Read the passage given below and answer the questions that follow:**

**(8 Marks)**

1. It seems that there is never enough time in the day. But, since we all get the same 24 hours, why is it that some people achieve so much more with their time than others? The answer lies in good time management. 'Time management' refers to the way that you organize and plan how long you spend on specific activities. Good time management requires an important shift in focus from activities to results: being busy isn't the same as being effective. (Ironically, the opposite is often closer to the truth.) Spending your day in a frenzy of activity often achieves less, because you're dividing your attention between so many different tasks. Good time management lets you work smarter – not harder – so you get more done in less time.
2. It may seem counter-intuitive to dedicate precious time to learning about time management, instead of using it to get on with your work, but the benefits are enormous. It improves productivity and efficiency. Your reputation as a professional grows. The stress levels dip and a world of opportunities opens up for you. Your career advances and important goals are reached.
3. Failing to manage your time effectively can have some very undesirable consequences. Deadlines are missed and the workflow is not only inefficient but of poor quality. It dents your reputation as a professional and your career is in danger of being stalled. As a result, your stress level shoots up.
4. Everyday interruptions at work can be a key barrier to managing your time effectively and, ultimately, can be a barrier to your success. Think back to your last workday and consider for a minute the many interruptions that occurred. There may have been phone calls, emails, hallway conversations, colleagues stopping by your office, or anything else that unexpectedly demanded your attention and, in doing so, distracted you from the task at-hand. Because your day only has so many hours in it, a handful of small interruptions can rob you of the time you need to achieve your goals and be successful in your work and life. More than this, they can break your focus, meaning that you have to spend time re-engaging with the thought processes needed to successfully complete complex work. The key to controlling interruptions is to know what they are and whether they are necessary, and to plan for them in your daily schedule.

**Contd...3**

- (a) On the basis of your reading of the passage, make notes on it using headings and subheadings. Use recognizable abbreviations (wherever necessary-minimum four) and an appropriate format. Also supply a suitable title to it. (5)
- (b) Write a summary of the passage in about 80 words. (3)

**SECTION B : WRITING AND GRAMMAR (30 MARKS)**

- Q3. On behalf of the Election Commission of India, draft a poster urging people to vote. Also, emphasize on the importance of casting one's vote in a democracy. (Word limit:50 words) (4)

OR

Blood Donation Day is celebrated on 14th June every year. The Social Welfare Club of your school is organizing a blood donation camp on the occasion. Design a poster urging more and more people to donate blood for the noble cause. (Word limit:50 words)

- Q4. You are Aman/Amita of Bluebells School, Lucknow. You have been selected to represent your state at the National Athletics Championship. Write a letter to the principal requesting him to grant you permission to attend the school one hour late for 10 days as you must attend the athletics coaching. (Word limit :120-150 words) (8 Marks)

OR

As the Head Boy/Girl of your school, write a letter to the principal requesting him to arrange a career counselling session for the students of classes XI and XII. Request him to invite experts from different professions to speak to the students to give insights and information. (Word limit :120-150 words)

- Q5. You are Anita / Anil. Write a debate expressing your views FOR or AGAINST on either of the motions given. (Word limit :120-150 words) (8 Marks)

'The Science stream offers more opportunities than that of commerce'

OR

'Video games aid learning'

- Q6. In the following question, each passage consists of six sentences. The first and the sixth sentence are given as S1 and S6. The middle four sentences in each have been jumbled up. These are labelled as P, Q, R and S. You are required to choose the right sequence from the options given. (1x2=2)

- a) S1 : Calcutta, unlike other cities, kept its trams.  
P : As a result ,there was horrendous congestion.  
Q : It was going to be the first in South Asia.  
R : They run down the center of the road  
S : To ease this, the city decided to build an underground railway line.  
S6 : The foundation stone was laid in 1972.

The proper sequence should be:

A. PRSQ      B. PSQR      C. SQRP      D. RPSQ

- b) S1 : Mahatma Gandhi had a unique way of life.  
P : He did not believe in theoretical ideology.  
Q : His principles were mainly founded in action.  
R : So, we must strive to keep them.  
S : Many of these principles suit our tradition.  
S6 : That will be our homage to Gandhiji.

The Proper sequence should be:

A. PQRS      B. PQSR      C. QSPR      D. PSQR

- Q7. The following passage has not been edited. There is one error in each line. Write the incorrect word and the correction in your answer sheet. (1x4=4)

The road to success is no a bed of roses.  
Only those who wade on hazards and hurdles  
can achieve successful. Set yourself clear goals  
and define precisely what you wants to do.  
Goals provide direction for your behaviour  
and guide your actions and thoughts.

Incorrect Word

(eg.) no

Correction

not

- |           |       |
|-----------|-------|
| (a) _____ | _____ |
| (b) _____ | _____ |
| (c) _____ | _____ |
| (d) _____ | _____ |

- Q8. Complete the following sentences by choosing the appropriate form of the verbs given. (1x4=4)**  
Researchers at Harvard and McGill University .....(a)..... on an amnesia drug that .....(b)..... or deletes bad memories. The technique .....(c)..... to allow psychiatrists to disrupt the biological pathways that allow a memory .....(d).....
- a. i) work            ii) are working        iii) have worked      iv) had worked  
b. i) block            ii) is blocking        iii) blocks            iv) has blocked  
c. i) seem            ii) seems              iii) is seeing        iv) has seemed  
d. i) to recalled      ii) to be recalled     iii) to be recalling   iv) recalled

**LITERATURE (30 Marks)**

- Q9. Read the extracts given below and answer the questions that follow: (1x3=3)**

- a) Eternal, I rise impalpable out of the land and the  
bottomless sea,  
Upward to heaven, whence vaguely form'd, altogether  
changed and yet the same,  
(i) Why does the rain call itself 'eternal'?  
(ii) What does the phrase 'vaguely formed' refer to?  
(iii) Give the poetic device used in the phrase 'bottomless sea'.

- b) When did my childhood go? (1x3=3)  
Was it the day I ceased to be eleven,  
Was it the time I realized that Hell and Heaven,  
Could not be found in Geography,  
And therefore, could not be,  
Was that the day!  
(i) What is the quality acquired by the poet at this stage of life?  
(ii) How did the narrator realize that hell and heaven did not exist?  
(iii) Name the poetic device used in the third line of the stanza.

- Q10. Answer any six of the following questions in about 40 words each. (2x6=12)**

- a) What were Ranga's views about marriage? Do you find any change in them at the end of the story? How?  
b) Who was Norbu? How could he be a help to the narrator?  
c) "I think it's not facts that matter, but ideas". To whom does Einstein say this and why?  
d) Comment on the complete transformation of the laburnum tree as described by the poet.  
e) What reasons did the Head Teacher give for expelling Albert?  
f) There is a parallel drawn between rain and music in the poem 'The Voice of the Rain'. Explain.  
g) Describe any two instances of humour in the story 'Ranga's Marriage'.

- Q11. Answer any one of the following questions in about 120 to 150 words: (6)**  
What are the earth's principal biological systems? Why have they been depleted and how can they be preserved?

OR

What kind of a teacher was Crocker Harris? Do you think Taplow hated him? Justify your answer based on your reading of the play 'The Browning Version'.

- Q12. Answer any one of the following questions in about 120 to 150 words: (6)**  
What is the main idea of the play 'Mother's Day'? Has it been brought out effectively by the writer? Discuss.

OR

'For doctors, the duty towards the patients is foremost, irrespective of their own personal affairs.' Discuss with reference to the lesson 'Birth'.



# DELHI PUBLIC SCHOOL, BHILAI

DATE : 07.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – MATHEMATICS

Time : 3 Hrs.  
Max. Marks : 80

## General Instructions :

Read the following instructions very carefully and strictly follow them :

- (i) This question paper contains two parts A and B. Each part is compulsory.  
Part A carries 24 marks and Part B carries 56 marks.
- (ii) Part A has Objective Type Questions and Part B has Descriptive Type Questions.
- (iii) Both Part A and Part B have choices.

### Part A

- (i) It consists of two sections I and II.
- (ii) Section I comprises of 16 very short answer type questions.
- (iii) Section II contains 2 case studies. Each case study comprises 5 case-based MCQs.  
An examinee is to attempt any 4 out of 5 MCQs.

### PART B

- (i) It consists of three sections III, IV and V.
- (ii) Section III comprises of 10 questions of 2 marks each.
- (iii) Section IV contains of 7 questions of 3 marks each.
- (iv) Section V comprises of 3 questions of 5 marks each
- (v) Internal choice is provided in 3 questions of Section – III, 2 questions of section – IV and each question of Section – V. You have to attempt only one of the alternatives in all such questions.

## Part – A Section – I

Questions 1 to 16 carries 1 mark each

1. Find the value of  $\tan\left(\frac{\pi}{12}\right)$
2. If  $3\sin\theta = 2\cos\theta$ , then  $\sin 2\theta$  is  
(a)  $\frac{4}{9}$       (b)  $\frac{12}{13}$       (c)  $\frac{5}{13}$       (d)  $\frac{12}{5}$
3.  $\frac{\cos 16^\circ + \sin 16^\circ}{\cos 16^\circ - \sin 16^\circ} =$  (a)  $\tan 61^\circ$  (b)  $\cot 61^\circ$  (c)  $\tan 29^\circ$  (d)  $\cot 29^\circ$
4. If  $\tan x = \frac{2}{3}$  and x lies in quadrant III, then  $\operatorname{cosec} x + \sec x$  is  
(a)  $-\frac{7\sqrt{13}}{6}$       (b)  $-\frac{2\sqrt{13}}{6}$       (c)  $-\frac{10\sqrt{13}}{6}$       (d)  $-\frac{5\sqrt{13}}{6}$
5. Solve for x :  $-5 \leq \frac{2-3x}{4} \leq 9$ .
6. If  $nP_4 : nP_5 = 1 : 2$ , then n = -----
7. If  $16C_r = 16C_{r+2}$ , then  $rC_4$   
(a) 15 (b) 35 (c) 70 (d) none of these
8. Anshu scored 73,67 and 72 marks in the Mathematics test. How many marks he should get in his fourth test, so as to have an average of at least 75?
9. The foci of the hyperbola  $9x^2 - 16y^2 = 144$  is -----
10. Find the ratio in which the line segment joining the points (2,4,5) and (3,-5,4) is divided by the XZ – plane.
11. Find the derivative of  $y = \frac{1}{ax^2+bx+c}$
12. The derivative of  $y = \frac{x^2}{\operatorname{cosec} x}$  is  
(a)  $2x \cdot \sin x + x^2$       (b)  $x^2 \cdot \cos x + x \cdot \sin x$       (c)  $2x \sin x + x^2 \cos x$       (d) none of these

:: 2 ::

13. A coin is tossed. If it shows head, we throw a die. If it shows a tail, we toss another coin. Describe the sample space.
14. A bag contains 6 red, 4 white and 8 blue balls. If three balls are drawn at random, find the probability that the drawn balls are of different colours.
15. From a pack of 52 cards, a card is drawn at random. Find the probability of getting an eight of hearts or a nine of diamond.
16. Given  $P(A) = \frac{3}{5}$  and  $P(B) = \frac{1}{5}$ . Find  $P(\text{not } A \text{ and not } B)$  if A and B are mutually exclusive events.

Section – II

Case study – based questions are compulsory. Attempt any 4 sub parts of each question. Each sub part carries 1 mark.

17. Four friends Sourabh, Shiva, Mayank and Rahul were playing cards for fun. Daksh was shuffling the cards and asked Rahul to choose any 4 cards at random.

(1) What is the probability that Rahul getting all face cards.

- (a)  $\frac{26C_4}{52C_4}$  (b)  $\frac{12C_4}{52C_4}$  (c)  $\frac{(12C_2)^2}{52C_4}$  (d) none of these

(2) What is the probability that Rahul getting two red and two spade cards

- (a)  $\frac{13C_2 \times 13C_2}{52C_4}$  (b)  $\frac{26C_2 \times 26C_2}{52C_4}$  (c)  $\frac{26C_2 \times 13C_2}{52C_4}$  (d) none of these



(3) What is the probability that Rahul getting one card from each suit

- (a)  $\frac{1}{52C_4}$  (b)  $\frac{12C_4}{52C_4}$  (c)  $\frac{13C_4}{52C_4}$  (d)  $\frac{13^4}{52C_4}$

(4) What is the probability that Rahul getting all king cards

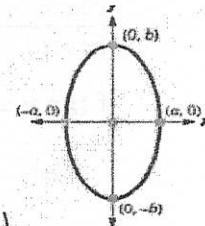
- (a)  $\frac{1}{52C_4}$  (b)  $\frac{4}{52C_4}$  (c)  $\frac{16}{52C_4}$  (d)  $\frac{6}{52C_4}$

(5) What is the probability that Rahul getting 2 kings, 1 number card and 1 ace card

- (a)  $\frac{4C_2 \times 64}{52C_4}$  (b)  $\frac{4C_2 \times 48}{52C_4}$  (c)  $\frac{4C_2 \times 112}{52C_4}$  (d) none of these

18. The equation of an ellipse is  $\frac{x^2}{16} + \frac{y^2}{25} = 1$ , then

- (1) The vertices are  
(a)  $(\pm 4, 0)$  (b)  $(0, \pm 5)$  (c)  $(0, \pm 4)$  (d)  $(\pm 5, 0)$
- (2) The foci are the points  
(a)  $(0, \pm 3)$  (b)  $(0, \pm 4)$  (c)  $(0, \pm 5)$  (d)  $(\pm 5, 0)$
- (3) The eccentricity of the ellipse is  
(a)  $\frac{4}{5}$  (b)  $\frac{3}{5}$  (c)  $\frac{2}{5}$  (d)  $\frac{3}{4}$
- (4) The directrices are the lines  
(a)  $x = \pm \frac{16}{3}$  (b)  $x = \pm \frac{25}{3}$  (c)  $y = \pm \frac{41}{3}$  (d) none of these
- (4) The length of latus rectum is  
(a) 10 (b)  $\frac{18}{5}$  (c)  $\frac{8}{5}$  (d) none of these



Part – B

Section – III

Questions 19 to 28 carries 2 marks each

19. A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second?

(OR)

Prove that  $\cos^2 2x - \cos^2 6x = \sin 4x \sin 8x$

20. If  $\sin A = \frac{4}{5}$  and  $\cos B = \frac{5}{13}$  and if  $0 < A < \frac{\pi}{2}$  and  $\frac{3\pi}{2} < B < 2\pi$ , find  $\cos(A+B)$
21. Solve for x :  $\frac{2x-1}{3} \geq \frac{3x-2}{4} - \frac{2-x}{5}$

Contd...3

22. How many 6 digits numbers can be formed from the digits 0,1,3,5,7 and 9 which are divisible by 10 and no digit is repeated.
23. Show that the points (0,7,10), (-1,6,6) and (-4,9,6) are the vertices of a right angled isosceles triangle.
24. Find the equation of the hyperbola with foci at (0,±13) and vertices at (0,±12).

(OR)

Find the equation of the circle with centre at (-2,3) and touches the line  $3x + 4y + 19 = 0$ .

25. If  $y = \frac{\cos x + \sin x}{\cos x - \sin x}$ , find  $\frac{dy}{dx}$ .

(OR)

If  $y = \frac{1 + \frac{1}{x}}{1 - \frac{1}{x}}$ , find  $\frac{dy}{dx}$

26. If  $y = \frac{x}{x^3 + 1}$ , find  $\frac{dy}{dx}$

27. A and B are any two events such that  $P(A) = 0.54$ ,  $P(B) = 0.69$  and  $P(A \cap B) = 0.35$ . Find  $P(A \cup B)$  and  $P(A' \cap B)$

28. In a certain lottery 5000 tickets are sold and 10 equal prizes are awarded. What is the probability of not getting a prize if you buy two tickets.

Section – IV

Questions 29 to 35 carries 3 marks each

29. Prove that  $\cos^2 x + \cos^2(x + \frac{\pi}{3}) + \cos^2(x - \frac{\pi}{3}) = \frac{3}{2}$ .

(OR)

Prove that  $\cos 10^\circ \cdot \cos 30^\circ \cdot \cos 50^\circ \cdot \cos 70^\circ = \frac{3}{16}$

30. There are eight points in a plane of which 3 are collinear. Find the number of different straight lines that can be formed from these points?
31. Solve for x :  $5(2x - 7) - 3(2x + 3) \leq 0$ ,  $2x + 19 \leq 6x + 4$
32. If 4 digit numbers greater than 5000 are randomly formed from the digits 0,1,3,5 and 7, what is the probability of forming a number divisible by 10 when the repetition of digits is not allowed.
33. Find the equation of the ellipse with major axis on the x – axis and which passes through the points (4,3) and (6,2).
34. Differentiate  $\sqrt[3]{\cos x}$  from first principles.

(OR)

Differentiate  $\sin^5 x$  from first principles.

35. If  $y = (ax + b)^n \cdot (cx + d)^n$ , find  $\frac{dy}{dx}$

Section – V

Questions 36 to 38 carries 5 marks each

36. If  $\operatorname{cosec} x = \frac{-5}{3}$  and x lies in quadrant III, find  $\sin(x/2)$ ,  $\cos(x/2)$ ,  $\tan(x/2)$  and  $\sin 2x$ .

(OR)

Prove that  $(1 + \cos \frac{\pi}{8}) \cdot (1 + \cos \frac{3\pi}{8}) \cdot (1 + \cos \frac{5\pi}{8}) \cdot (1 + \cos \frac{7\pi}{8}) = \frac{1}{8}$

37. Solve the following system of inequalities graphically:  $x + 2y \leq 10$ ,  $x + y \geq 1$ ,  $x - y \leq 0$ ,  $x, y \geq 0$ .

(OR)

A manufacturer has 600 liters of a 12% solution of acid. How many liters of a 30% solution must be added to it so that acid content in the resulting mixture will be more than 15% but less than 18%?

38. A rod of length 12 cm moves with its ends always touching the coordinate axes. Determine the equation of the locus of a point P on the rod which is 3 cm from the end in contact with the x – axis.

(OR)

Find the equation of the set of points P, the sum of whose distances from A(4,0,0) and B(-4,0,0) is equal to 10.



# DELHI PUBLIC SCHOOL, BHILAI

DATE : 07.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – APPLIED MATHEMATICS

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Max. Marks : 80

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- (ii) Part A has Objective Type Questions and Part B has Descriptive Type Questions.
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### Part A

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- (ii) Section I comprises of 16 very short answer type questions.
- (iii) Section II contains 2 case studies. Each case study comprises 5 case-based MCQs.

An examinee is to attempt any 4 out of 5 MCQs.

### Part B

- (i) It consists of three sections III, IV and V.
- (ii) Section III comprises of 10 questions of 2 marks each.
- (iii) Section IV contains of 7 questions of 3 marks each.
- (iv) Section V comprises of 3 questions of 5 marks each
- (v) Internal choices are provided in 3 questions of Section – III, 2 questions of Section – IV and 3 questions of Section – V. You have to attempt only one of the alternative in all such questions.

## PART-A SECTION-I

1. Find the number of ways by which a committee consisting of 3 men and 2 women can be chosen from 7 men and 5 women.
2. Which of the following is true?  
(a)  ${}^nC_r = {}^nP_r$  (b)  ${}^nP_r = Lr {}^nC_r$  (c)  $Lr {}^nP_r = {}^nC_r$  (d) None of these
3. Find  $\lim_{x \rightarrow 2^-} [x]$
4. Find  $\lim_{x \rightarrow 0} \frac{\sqrt{x+1}-1}{x}$
5. If  $f(x) = \frac{x^n - a^n}{x - a}$ , then  $f'(a)$  is  
(a) 1 (b) 0 (c)  $\frac{1}{2}$  (d) does not exist.
6. If  $y = \sqrt{x} + \frac{1}{\sqrt{x}}$  then find  $\frac{dy}{dx}$  at  $x = 1$
7. If  $P(A) = \frac{7}{13}$ ,  $P(B) = \frac{9}{13}$  and  $P(A \cap B) = \frac{4}{13}$ , then find  $P(A/B)$
8. If  $P(A \cup B) = 0.8$  and  $P(A \cap B) = 0.3$  then find the value of  $P(A') + P(B')$
9. If A, B and C are three mutually exclusive and exhaustive events of an experiment such that  $4P(A) = 3P(B) = 2P(C)$ , then find the value of  $P(B)$
10. Three dice are thrown simultaneously, then find the probability of getting a total of at least 5.
11. Find the value of x, if the line joining the points  $(-2, 6)$  and  $(4, 8)$  is perpendicular to the line joining the points  $(8, 12)$  and  $(x, 24)$ .
12. Find the equation of line passing through the point  $(2, -3)$  and having slope 2
13. Find the radius of the circle  $x^2 + y^2 - 6x - 4y - 12 = 0$ .
14. Find the length of latus rectum of parabola  $y^2 = 12(x - 3)$ .
15. The compound interest on ₹ 50000 at 5% per annum is ₹ 5125. Find the time period
16. The difference between compound and simple interest on an amount of ₹ 1000 for 2 years is ₹ 64. Find the rate of interest per annum



**SECTION-II**

17. In a game, the cards written the letters of the word 'PERMUTATIONS' are given to a group of children and asked to arrange them in all possible ways under the following conditions. Then the number of ways they can do it if



- (i) there is no restriction, is  
 (a)  $\frac{12!}{2!}$  (b)  $\frac{12!}{3!}$  (c)  $\frac{10!}{2!}$  (d)  $\frac{11!}{2!}$
- (ii) word starts with P and end with S, is  
 (a)  $\frac{12!}{2!}$  (b)  $\frac{10!}{2!}$  (c)  $\frac{12!}{3!}$  (d)  $\frac{12!}{2!}$
- (iii) vowels are all together, is  
 (a)  $\frac{8!5!}{2!}$  (b)  $\frac{8!}{2!}$  (c)  $\frac{7!5!}{2!}$  (d)  $\frac{8!5!}{2!}$
- (iv) there are always 4 letters between P and S, is  
 (a)  $\frac{10!}{2!}$  (b)  $\frac{10!}{2!} \times 7$  (c)  $\frac{10!}{2!} \times 14$  (d)  $\frac{10!}{4!} \times 7!$
- (v) P comes before S, is  
 (a)  $3 \times 11!$  (b)  $2 \times 11!$  (c)  $6 \times 11!$  (d)  $3 \times 10!$

18.



An amount of ₹ 10000 is put in a saving bank account for 5 years at 8% interest compounded semi-annually, then

- (i) The number of conversion periods is  
 (a) 10 (b) 6 (c) 8 (d) 16
- (ii) The rate of interest per interest period is  
 (a) 2% (b) 4% (c) 8% (d) 5%
- (iii) If it is compounded quarterly then frequency of conversion in a year is  
 (a) 3 (b) 2 (c) 4 (d) 1
- (iv) The amount the investor will have after 5 years, is ₹  
 (a) 15420 (b) 14790 (c) 16000 (d) 14970
- (v) If simple interest is imposed on the amount for 5 years with the same rate of interest then the difference between the amounts obtained by both the ways, is  
 (a) 420 (b) 790 (c) 480 (d) 600

**PART-B**  
**SECTION-III**

19. Evaluate  $\lim_{x \rightarrow -3} \frac{x^3+27}{\sqrt{x^2+7}-4}$  OR  $\lim_{x \rightarrow 7} \frac{4-\sqrt{9+x}}{1-\sqrt{8-x}}$
20. Three coins are tossed. Describe two events  
 (i) Which are mutually exclusive and exhaustive  
 (ii) Three events which are mutually exclusive but not exhaustive
21. Given that  $P(A \text{ or } B) = \frac{5}{6}, P(A \text{ and } B) = \frac{1}{3}, P(B') = \frac{1}{2}$   
 (i) Determine  $P(A)$   
 (ii) Show that A and B are independent

**OR**

Ten cards numbered 1 to 10 are placed in a box and one card is drawn at random, if it is known that the number on the card drawn is more than 3, what is the probability that it is an even number?

22. Find the equation of the line passing through (2,2) and cutting off intercepts on the axes whose sum is 9

**OR**

Find the distance of the point (-1,1) from the line  $12(x + 6) = 5(y - 2)$

23. Find the compound interest on Rs 8000 at the rate 10% per annum for  $1\frac{1}{2}$  years compounded half yearly.
24. In how many years will an amount double itself at the rate 11% compounded annually?
25. Mohan deposited ₹ 240000 for 2 years at the rate of 10% per annum compounded annually. If the income tax at 20% is deducted at the end of each year on interest accrued, find the amount he received at the end of 2 years?
26. The simple interest on a sum of money for 2 years at 4% per annum is Rs.450. Find the compound interest on this sum of money at same rate for 1 year if the interest is compounded half yearly.
27. A polygon has 44 diagonals. Find the number of sides.
28. find the equation of a parabola whose focus is at (0,-3) and directrix is  $y = 3$

**SECTION-IV**

29. Find  $n$  if  ${}^{2n}C_3 : {}^nC_3 = 11:1$
30. How many words with or without meaning can be formed using 2 vowels and 3 consonants from the letters of the word "DAUGHTER"?
31. Differentiate  $\frac{\sqrt{a+x}-\sqrt{a-x}}{\sqrt{a+x}+\sqrt{a-x}}$  w.r.t.  $x$  **OR** If  $y = \frac{x}{x+4}$ , then prove that  $x \frac{dy}{dx} = y(1 - y)$
32. If  $f(x) = \begin{cases} \frac{x^2-25}{x-5}, & x \neq 5 \\ k, & x = 5 \end{cases}$  is continuous at  $x = 5$ , find the value of  $k$ .

**OR**

Differentiate  $\frac{1}{\sqrt{ax+b}}$  by first principle

33. A bag contains 3 white and 2 black balls and another bag contains 2 white and 4 black balls. A bag is selected at random and a ball is drawn, find the probability that the ball drawn is white.
34. Find the present value of a regular annuity of Rs. 1000 payable at 12% per annum compounded annually?
35. A wagon is purchased on instalment basis such that ₹ 5000 is to be paid on signing the contract and the balance in 4 equal instalments of ₹ 3000. If the interest is charged at 5% per annum, what should be the cash down price of the wagon?

**SECTION-V**

36. A man is known to speak truth 3 out of 5 times. He throws a die and reports that it is a six. Find the that it is actually six.

**OR**

There are three coins, one is a two headed coin, another is a biased coin that comes up with head 75% of the times and third is an unbiased coin. One of the three coin is chosen at random and tossed, and it shows head. What is the probability that it was a two headed coin?

37. Find the equation of the circle passing through the points(2,3) and (-1,1) and whose centre lies on the line  $x - 3y - 11 = 0$

**OR**

Find the coordinates of the foot of perpendicular from the point(-1,3) to the line  $3x - 4y - 16 = 0$

38. A man borrows Rs. 4000 at 5% and promises to pay off the loan in 30 equal annual instalments beginning at the end of first year. What is the annual payment necessary?

**OR**

Mr. Jatinder wishes to buy a house valued at Rs. 17000. He is prepared to pay now Rs. 9000 and the balance in 8 equal annual instalments. If interest is calculated at  $3\frac{1}{2}$ % per annum, how much should he pay annually?



**General Instructions:**

1. Section A : Q. No. 1 and 2 are case study based questions having 4 MCQs each carrying 1 mark.
2. Section A : Q. No. 3 to 16 are MCQs carrying 1 mark each.
3. Section B : Q. No. 17 to 25 are short answer type questions carrying 2 marks each.
4. Section C : Q. No. 26 to 30 carry 3 marks each.
5. Section D : Q. No. 31 to 33 carry 5 marks each.

**SECTION : A**

**Q.01** Alkali and alkaline earth metals along with hydrogen and helium constitute s-block elements. They have low ionization enthalpies and hence exhibit characteristic flame colourations. Their atomic size increases down the group. Lithium and Beryllium, the first elements of group 1 and group 2 respectively exhibit some properties which are different from other members of the group.

- (a) Which of the following element do not impart any colour to the flame.  
(i) Calcium            (ii) Sodium            (iii) Magnesium            (iv) Lithium
- (b) The correct order of atomic size of the following element is : Ca, Be, Mg  
(i) Be>Mg>Ca            (ii) Ca>Mg>Be            (iii) Mg>Ca>Be            (iv) Ca>Be>Mg
- (c) The anomalous behaviour of lithium is due to  
(i) large size of lithium            (ii) Small size of lithium  
(iii) low ionization enthalpy of lithium            (iv) presence of d-orbital in lithium
- (d) Alkali metals are not found in nature because  
(i) they are highly reactive            (ii) they are chemically inert  
(iii) they have the largest sizes in a period            (iv) they have low ionization enthalpy.

**Q.02** Chemical equilibria are important in numerous biological and environmental process. The rates of forward and reverse reactions become equal at equilibrium. The magnitude of the equilibrium constant gives an idea of the relative amounts of reactants and products. Change in concentration, temperature or pressure will shift the equilibrium in a direction that tends to undo the effect of change imposed.

(i) The equilibrium constant value  $K_c$  changes for the equilibrium  $\text{PCl}_5(\text{g}) \rightleftharpoons \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$  with  
(a) Pressure    (b) Catalyst    (c) addition of  $\text{PCl}_5$     (d) temperature

(ii) If the equilibrium constant for

$\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{NO}(\text{g})$  is  $K$ , the equilibrium constant for

$\frac{1}{2}\text{N}_2(\text{g}) + \frac{1}{2}\text{O}_2(\text{g}) \rightleftharpoons \text{NO}(\text{g})$  will be

- (a)  $\frac{1}{2}K$     (b)  $K$     (c)  $K^2$     (d)  $K^{1/2}$

OR

For the reaction  $\text{CO}(\text{g}) + \text{Cl}_2(\text{g}) \rightleftharpoons \text{COCl}_2(\text{g})$ ,

$K_p/K_c$  is equal to :

- (a)  $\sqrt{RT}$     (b)  $RT$     (c) 1.0    (d)  $1/RT$

(iii) For the reaction,

$\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g}) + \text{heat}$

the equilibrium shifts in the forward direction

- (a) by increasing the concentration of  $\text{NH}_3$   
(b) by decreasing the pressure  
(c) by decreasing the temperature  
(d) By increasing the temperature

(iv) If the value of equilibrium constant for a particular reaction is  $1.6 \times 10^{12}$ , then at equilibrium, the system will contain

- (a) Mostly products            (b) mostly reactants  
(c) all reactants            (d) similar amount of reactant and products

- Q.03** For the process to occur under adiabatic conditions, the correct condition is  
 (a)  $\Delta T = 0$       (b)  $\Delta T = 0$       (c)  $q = 0$       (d)  $w = 0$
- Q.04** Which among the following will behave like Lewis acid  
 (a)  $\text{BF}_3$       (b)  $\text{H}_2\text{O}$       (c)  $\text{OH}^-$       (d)  $\text{NH}_3$
- Q.05** Addition of water to ethyne in presence of  $\text{H}_2\text{SO}_4$  and mercuric sulphate gives:  
 (a) Ethanol      (b) Ethanal      (c) Ethanoic acid      (d) Ethane

OR

Tertiary butyl bromide on heating with alcoholic potash gives:

- (a) But-1-ene      (b) 2-methyl propene      (c) Propene      (d) But-2-ene
- Q.06** The enthalpies of all elements in their standard states are:  
 (a) unity      (b) less than zero      (c) zero      (d) different for each element
- Q.07** Which among the following is an  $e^-$  precise hydride?  
 (a) water      (b) Ammonia      (c) Methane      (d)  $\text{B}_2\text{H}_6$
- Q.08** In a process, 701 J of heat is absorbed by a system and 394 J of work is done by the system. The change in internal energy of the process is :-  
 (a) -307 J      (b) +307 J      (c) -1095 J      (d) +1095 J

OR

A reaction,  $A+B \rightarrow C+D+q$  is found to have a positive entropy change. The reaction will be:

- (a) Possible at high temperature      (b) possible at any temperature  
 (b) Possible at low temperature      (d) not possible at any temperature
- Q.09** For the process :  $2\text{Cl}_{(g)} \rightarrow \text{Cl}_{2(g)}$   
 (a)  $\Delta H > 0$  ,  $\Delta S > 0$       (b)  $\Delta H > 0$  ,  $\Delta S < 0$   
 (c)  $\Delta H < 0$  ,  $\Delta S < 0$       (d)  $\Delta H < 0$  ,  $\Delta S > 0$
- Q.10** The alkene which on ozonolysis gives ethanal and propanone is :  
 (a) 2-methyl-but-2-ene      (b) 3-methyl-but-1-ene  
 (c) Pent-2-ene      (d) 2-methyl Propene
- Q.11** For a reaction :  $\text{N}_{2(g)} + 3\text{H}_{2(g)} \rightleftharpoons 2\text{NH}_{3(g)}$  if  $\Delta_r H^\circ = -92.4 \text{ kJ/mol}$ , then the standard enthalpy of formation of  $\text{NH}_3(g)$  is :  
 (a) + 46.2 kJ/mol      (b) - 46.2 kJ/mol      (c) Zero      (d) - 92.4 kJ/mol

In the following questions (12-16), a statement of Assertion followed by a statement of Reason is given, choose the correct answer out of the following choices:

- (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) Both Assertion and Reason are false.

**Q.12** Assertion : Enthalpy is a state function.

Reason : The value of Enthalpy is Path dependent.

**Q.13** Assertion : If  $Q_c$  (reaction quotient) is less than  $K_c$  (equilibrium constant) reaction moves in direction of reactants.

Reason : The value of reaction quotient is independent of temperature.

**Q.14** Assertion : Ethyne is more acidic than Ethene.

Reason : In Ethyne, Carbon is  $sp$  hybridized.

**Q.15** Assertion : Benzene does not decolourize bromine water.

Reason : Benzene is stabilized by resonance due to delocalization of  $\pi$  - electrons.

**Q.16** Assertion : Boiling point of isopentane is higher than normal pentane.

Reason : Branching increases the boiling point of isomeric alkanes.

#### SECTION : B

- Q.17** What characteristics do you expect from an  $e^-$  deficient hydride with respect to its structure?
- Q.18** Lithium shows similarities with magnesium in its chemical behavior. What is the cause of these similarities?
- Q.19** Atomic radius of Gallium is less than that of aluminium. Why?

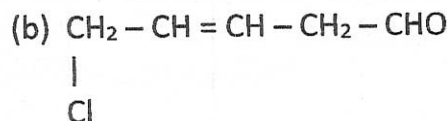
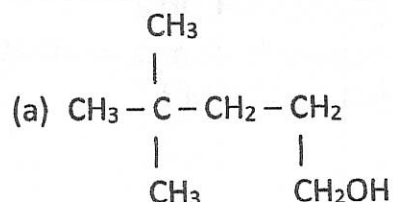
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Q.20 Give the IUPAC name of the following compounds:



OR

Give the IUPAC name of the following compounds:



Q.21 Write bond line formula of :

- (a) Isopropyl alcohol                      (b) Heptan-4-one

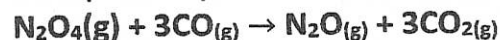
Q.22 Write the conjugate acid and conjugate base for the following :

- (a)  $\text{HSO}_4^-$                                       (b)  $\text{H}_2\text{O}$

Q.23 For the reaction at 298 K,  $2\text{A} + \text{B} \rightarrow \text{C}$

$\Delta H = 400 \text{ kJ/mol}$  and  $\Delta S = 0.2 \text{ kJ/K/mol}$ . At what temperature will the reaction become spontaneous considering  $\Delta H$  and  $\Delta S$  to be constant over the temperature range.

Q.24 Enthalpies of formation of  $\text{CO}_{(g)}$ ,  $\text{CO}_{2(g)}$ ,  $\text{N}_2\text{O}_{(g)}$  and  $\text{N}_2\text{O}_{4(g)}$  are -110, -393, 81 and 9.7 kJ/mol respectively. Find the value of  $\Delta_r H^\circ$  standard enthalpy for the reaction :

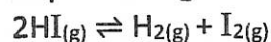


Q.25 Convert the following :

- (a) Benzene to p-nitrobromobenzene  
(b) Ethyne to Benzene

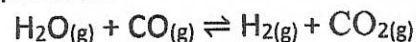
#### SECTION : C

Q.26 A sample of  $\text{HI}_{(g)}$  is placed in a flask at a pressure of 0.2 atm. At equilibrium the partial pressure of  $\text{HI}_{(g)}$  is 0.04 atm. At equilibrium the partial pressure of  $\text{HI}(g)$  is 0.04 atm. What is  $K_p$  for the given equilibrium?



OR

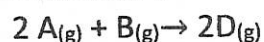
One mole of  $\text{H}_2\text{O}$  and one mole of  $\text{CO}$  are taken in 10 L vessel and heated to 725K. At equilibrium 40% of water (by mass) reacts with  $\text{CO}$  according to the equation. What is the equilibrium constant for the reaction?



Q.27 What do you expect the nature of hydrides if formed by elements of atomic numbers 15, 19, 23 with hydrogen ?

Q.28 The stability of lower oxidation state increases while that of higher oxidation state decreases down the group in p-block. Give reason.

Q.29 For the reaction :



$$\Delta U^\circ (\text{Internal energy}) = -10.5 \text{ kJ and}$$

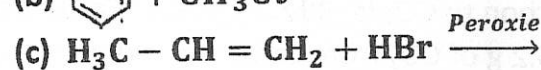
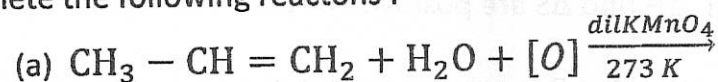
$$\Delta S^\circ (\text{entropy}) = -44.1 \text{ JK}^{-1} \text{ at } 25^\circ \text{ C}$$

Calculate  $\Delta G^\circ$  for the reaction and predict whether the reaction may occur spontaneously.

OR

The enthalpy of combustion of methane, graphite and dihydrogen at 298 K are -890.3 kJ/mol, -393.5 kJ/mol and -285.8 kJ/mol respectively. Calculate the enthalpy of formation of Methane  $\text{CH}_{4(g)}$ .

Q.30 Complete the following reactions :



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:: 4 ::  
SECTION : D

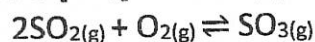
Q.31 (A) Define Common Ion Effect

(B) Describe the effect of : (any two)

- (i) addition of  $H_2$
- (ii) removal of  $CO$
- (iii) removal of  $CH_3OH$

on the equilibrium of the reaction:  $2H_{2(g)} + CO_{(g)} \rightleftharpoons CH_3OH_{(g)}$

(C) What is  $K_c$  for the following equilibrium when the equilibrium concentration of each substance is  $[SO_2] = 0.60M$ ,  $[O_2] = 0.82M$  and  $[SO_3] = 1.90 M$  ?



(1+2+2)

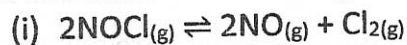
OR

(A) The equilibrium constant expression for a gas reaction is

$$K_c = \frac{[NH_3]^4 [O_2]^5}{[NO]^4 [H_2O]^6}$$

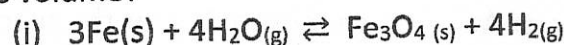
Write the balanced equation corresponding to this expression.

(B) Find the value of  $K_c$  of the given equilibria from the value of  $K_p$ .



$K_p = 1.9 \times 10^{-2}$  at 500 K.

(C) Does the number of moles of reaction products increase, decrease or remain same when the following equilibria is subjected to a decrease in pressure by increasing the volume? [1+2+2]



Q.32 (A) Which among the following pair represents the correct IUPAC name for the compounds concerned?

(i) 2-chloro-4-methylpentane

OR

4-chloro-2-methylpentane

(ii) But-3-yn-1-ol

OR

But-4-ol-1-yne

(B) Write IUPAC names of the products obtained by ozonolysis of 1-Phenylbut-1-ene.

(C) Draw the cis and trans structures for hex-2-ene. [2+2=1]

OR

(A) Write IUPAC names of the products obtained by ozonolysis of 2-Ethylbut-1-ene.

(B) What are the necessary conditions for any system to be aromatic?

(C) Arrange the given set of compounds in order of their decreasing relative reactivity with an electrophile.

2,4-dinitrochlorobenzene, Chlorobenzene, p-nitrochlorobenzene

[2+2=1]

Q.33 (A) Express the change in internal energy of a system when

(i) No work is done on the system, but  $q$  amount of heat is taken out from the system and given to surroundings.

(ii) ' $w$ ' amount of work is done by the system and  $q$  amount of heat is supplied to the system.

(B) Define standard enthalpy of fusion.

(C) Which among the following are intensive properties of a system ?

enthalpy, pressure, internal energy, density, volume

(D) State first Law of Thermodynamics [2+1+1+1]

OR

(A) Define Entropy.

(B) For a reaction both  $\Delta H$  and  $\Delta S$  are positive. Under what conditions will the reaction be spontaneous ?

(C) An exothermic reaction  $A \rightleftharpoons B$  is spontaneous in the backward direction. What will be the sign of  $\Delta S$  for the forward reaction?

(D) Enthalpy of combustion of carbon to  $CO_2$  is  $-393.5$  kJ/mol. Calculate the heat released upon formation of 35.2 g of  $CO_2$  from carbon and dioxygen gas. [1+1+1+2]



# DELHI PUBLIC SCHOOL, BHILAI

DATE : 03.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – PHYSICS

Time : 3 Hrs.  
Max. Marks : 70

## General Instructions :

- (i) All questions are compulsory. There are 33 questions in all.
- (ii) This question paper has five sections : **Section A, B, C, D and E.**
- (iii) **Section A** - Q.1 to 10 contains very short answer questions and Q.11 to 14 contains assertion - reasoning MCQs of 1 mark each,  
**Section B** - Q.15 & 16 contains case-based questions of 4 marks each,  
**Section C** - Q.17 to 25 contains short answer questions of 2 marks each,  
**Section D** - Q.26 to 30 contains five short answer questions of 3 marks each and  
**Section E** contains three long answer questions of 5 marks each.
- (iv) There is no overall choice. However internal choice is provided. You have to attempt only one of the choices in such questions.

## SECTION – A

- Q.01 What is the Young's modulus of a perfectly rigid body?
- Q.02 Water is more elastic than air. Why?

OR

Why bridges are declared unsafe after a long use?

- Q.03 Why air bubble in a liquid rises up?

OR

Why doesn't Mercury wet the glass?

- Q.04 What is Stoke's law?
- Q.05 Water pipes may burst in cold countries when temperature goes down below zero degree celsius why?
- Q.06 What is the change in the internal energy of a gas which is compressed adiabatically?
- Q.07 Name the thermodynamic variable defined by the zeroth law of thermodynamics.

OR

What is the value of specific heat of an ideal gas in an isothermal process?

- Q.08 State the law of equi-partition of energy.
- Q.09 What is the basic condition for the motion of a particle to be SHM?
- Q.10 What is the total energy of a simple harmonic oscillator?

For question numbers 11, 12, 13 and 14, two statements are given – one labelled Assertion (A) and the other labelled Reason(R). Select the correct answer to these questions from the codes (a), (b), (c) and (d). (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 and R is also false.

- Q.11 **Assertion(A)** : A brass disc is just fitted in a hole in a steel plate. The system must be cooled to loosen the disc from the hole.  
**Reason(R)** : The coefficient of linear expansion for brass is greater than the coefficient of linear expansion for steel.
- Q.12 **Assertion(A)** : Reversible systems are difficult to find in real world.  
**Reason (R)** Most processes are dissipative in nature.
- Q.13 **Assertion (A)** : Air pressure in a car tyre increases during driving.  
**Reason (R)** : Absolute zero degree temperature is not zero energy temperature.
- Q.14 **Assertion(A)** : All oscillatory motions are necessarily periodic motion but all periodic motion are not oscillatory.  
**Reason (R)** Simple pendulum is an example of oscillatory motion.

## SECTION – B

- Q.15 Case study; **Comparison of elasticity of wires** (Answer any four)  
Three wires A, B and C of same length and cross sectional area but different materials are available.

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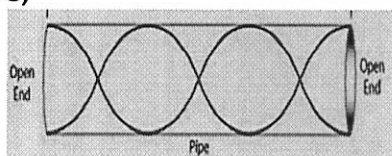
They are each stretched by applying the same deformative force to their ends. The wire A stretches least and returns back to its original length, when the deformative force is removed. The wire B stretches more than wire A and also returns back to its original length, when the deformative force is removed. The wire C stretches the most and remains deformed, even after the deformative force is removed.

- (i) Name the modulus of elasticity involved,
  - (a) Modulus of rigidity    (b) Bulk modulus    (c) Young's modulus    (d) none
- (ii) Which of them has the greater modulus of elasticity,
  - (a) A    (b) B    (c) C    (d) none
- (iii) Which of them has the least modulus of elasticity,
  - (a) A    (b) B    (c) C    (d) none
- (iv) What is the SI unit of modulus of elasticity,
  - (a)  $\text{Nm}^{-1}$     (b)  $\text{Nm}^{-2}$     (c)  $\text{Nm}^2$     (d)  $\text{Nm}$
- (vi) Which of them is suitable for making thin wires,
  - (a) A    (b) B    (c) A & B    (d) C

Q.16 Case study; **Normal mode of vibrations in an open organ pipe** (Answer any four)

An organ pipe is a simplest musical instrument in which sound is produced by setting an air column into vibration just like any wind instrument like flute, shehnai etc. A sound wave travels down the pipe and get reflected as its open or closed end, producing stationary waves. If the frequency of these waves is equal to the frequency of the edge tone resonance occurs and a loud sound is produced. If both ends of a pipe are open then it is called open organ pipe. In this case the reflection occurs from open boundaries and the organ pipe is set into vibration of different harmonic frequencies. And the fundamental frequency( $\nu$ ) in a given length L of the organ pipe is given by,  $\nu = v/2L$  it is also called first harmonic. Where  $v$  is velocity of sound in air.

- (i) Name the type of waves produced in an organ pipe,
  - (a) Transverse wave                      (b) Longitudinal wave
  - (c) Electromagnetic wave              (d) Matter wave
- (ii) Velocity of sound in air column depends upon,
  - (a) density                      (b)  $1/\text{density}$                       (c)  $1/\sqrt{\text{density}}$                       (d)  $\sqrt{\text{density}}$
- (iii) What is the frequency in the second mode of vibration,
  - (a)  $\nu/2$                       (b)  $\nu$                       (c)  $2\nu$                       (d)  $3\nu$
- (iv) In the case of stationary wave the separation between successive node and antinode is,
  - (a)  $\lambda/2$                       (b)  $\lambda/4$                       (c)  $3\lambda/4$                       (d)  $3\lambda/2$
- (v) From the given figure find the frequency of vibrations of air column in the open organ pipe,



- (a)  $\nu/2$                       (b)  $\nu/3$                       (c)  $2\nu$                       (d)  $3\nu$

**SECTION – C**

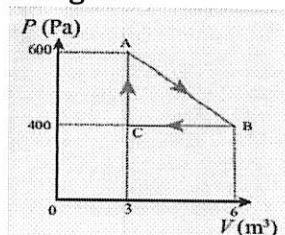
- Q.17 Draw stress-strain curve for a metallic wire. Depict elastic limit and permanent set.
- Q.18 To lift an automobile of 2000 kg a hydraulic pump with the large piston  $900 \text{ cm}^2$  area is employed. Calculate the force that must be applied to the pump at small piston of area  $10 \text{ cm}^2$ .
- Q.19 27-identical drops of water are falling down vertically in air each with the terminal velocity  $0.2\text{m/s}$ . If they are combined to form a single drop what will be its terminal velocity?
- Q.20 State Wien's displacement law. What is the importance of Wien's displacement law?

**OR**

Define coefficient of thermal conductivity, derive its SI unit?



- Q.21 In the given figure an ideal gas changes its state from A to C by path ABC. Calculate the total work done on the gas.



- Q.22 (a) State first law of thermodynamics, express it mathematically also.  
 (b) A gaseous system absorbs 110J of heat, its internal energy increases by 40J. What is the amount of work done by the system?
- Q.23 A simple harmonic motion is represented by  $x = 10 \sin (20t + 0.5)$  metre. Find maximum velocity and maximum acceleration.
- Q.24 What are resonant oscillations? Give an example.

**OR**

With the help of an example explain forced oscillations.

- Q.25 Explain the phenomenon of beats. What is the essential condition for the formation of Beats?

#### SECTION – D

- Q.26 (a) Define surface tension. Write its formula and dimensions.  
 (b) What happens to the surface tension of water when a detergent is added to it?

**OR**

Explain the followings ;

- (a) Coefficient of viscosity      (b) Streamline flow      (c) Turbulent flow

- Q.27 What do you understand by the followings ? Write their SI units;  
 (a) Specific heat      (b) Latent heat of fusion

**OR**

- (a) What is a black body?      (b) State Stefan-Boltzmann law of black body radiation?

- Q.28 On this basis of kinetic theory of gases, derive an expression for pressure exerted by an ideal gas.
- Q.29 Derive Newton's formula for speed of sound in air. What is the Laplace correction to it?
- Q.30 How are the stationary waves produced? Discuss formation of stationary waves in a string fixed at both ends and show that the first four harmonic frequencies are in the ratio 1:2:3:4.

#### SECTION – E

- Q.31 (a) State and prove Bernoulli's theorem. Draw necessary diagram.  
 (b) Why are the roofs of hut blown off in storm?

**OR**

- (a) What do you understand by capillarity? Give an example.  
 (b) Derive formula for rise (h) of a liquid in a capillary tube of uniform diameter. How does it vary with radius of the tube?

- Q.32 What is an isothermal process? State the conditions under which such a process take place, and hence derive an expression for work done by one mole of an ideal gas during isothermal expansion.

**OR**

What is an adiabatic process? State the conditions under which such a process takes place, and hence derive an expression for work done by one mole of an ideal gas during adiabatic expansion.

- Q.33 (a) What is a simple pendulum? Derive an expression for its time period.  
 (b) What is the effect on the frequency of oscillation of a simple pendulum mounted in a cabin that is falling freely under gravity? Explain.

**OR**

- (a) Show that the simple harmonic motion may be regarded as the projection of uniform circular motion along the diameter of the circle. Hence derive an expression for displacement and velocity of a particle executing SHM.  
 (b) What is the phase relation between displacement and velocity? Show graphically.



**General instructions-**

1. All questions are compulsory.
2. The question paper has 4 sections : Section A, B, C and D. There are 33 questions in the question paper.  
Section A has 14 questions of 1 mark each and two case based questions.  
Section B has 9 questions of 2 marks each,  
Section C has 5 questions of 3 marks each and  
Section D has 3 questions of 5 marks each.
3. There is no overall choice. However, internal choices have been provided in some questions.
4. Wherever necessary, neat and properly labelled diagram should be given.

**SECTION – A**

- Q.01 What is the average cell cycle span of a human cell?  
Q.02 Which cells of higher organisms show anaerobic respiration?  
Q.03 Does moon light support photosynthesis? Give reason.  
Q.04 Why are cytokinins named so?  
Q.05 What are the two types of agranulocytes?  
Q.06 How many molecules of oxygen bind to one molecule of hemoglobin?  
Q.07 What is gout?  
Q.08 In which type of muscle tissue can you see intercalated disc?  
Q.09 Name the cranial meninges from outer layer to the inner layer.  
Q.10 Give an example of a second messenger in the mechanism of protein hormone action.

**Question (Q.Nos.11-14)**

In each of the following questions, a statement of Assertion (A) is given followed by corresponding statement of Reason (R). Of the statements, mark the correct answer as

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

- Q.11 **Assertion (A)** : Some cells undergo Go Phase due to inactivation of cell cycle  
**Reason (R)** : Cells at this stage remain metabolically active, but no longer proliferate.

**OR**

**Assertion (A)** : In animal cells cytokinesis is achieved by the appearance of a furrow in plasma membrane.

**Reason (R)** : In plant cells, the formation of the new cell wall begins with the formation of simple precursor called cell plate.

- Q.12 **Assertion (A)** : ABA acts as anti-transparent.  
**Reason (R)** : It promotes senescence of leaf.

- Q.13 **Assertion (A)** : NADH dehydrogenase is the complex II of ETS.  
**Reason (R)** : Cytochrome-C acts as a mobile carrier for the transfer of electrons between complexes III and IV of ETS.

- Q.14 **Assertion (A)** : PS-I and PS-II names are given on the basis of activity in the photosynthesis.  
**Reason (R)** : During non-cyclic photophosphorylation, PS-II work first and then PS-I.

- Q.15 **DIRECTION** : Read the following and answer any four questions form 15(i) to 15(v) given below:

The neural and endocrine system jointly coordinate and regulate the physiological functions of the body. Certain hormones function antagonistic to each other to regulate a particular metabolism.

- (i) Which pituitary hormone is secreted without involvement of a releasing hormone?

(a) TSH (b) FSH (c) oxytocin (d) prolactin

- (ii) Tetraiodothyronine is

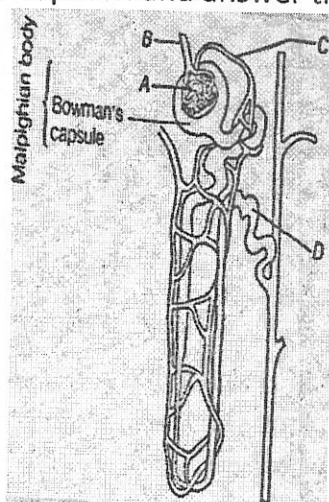
(a) T<sub>3</sub> (b) Thyroxine (c) TSH (d) TRH

- (iii) A person is having problem with Calcium and Phosphorus metabolism. Which one of the following glands may not be functioning properly

(a) Pancreas (b) thyroid (c) parathyroid (d) pineal

- (iv) Sertoli cells are regulated by the pituitary hormone known as  
 (a) LH      (b) FSH      (c) GH      (d) prolactin
- (v) Which hormone produces anti inflammatory reaction and suppresses immune response in addition to its primary functions  
 (a) cortisol      (b) thymosin      (c) calcitonin      (d) aldosterone

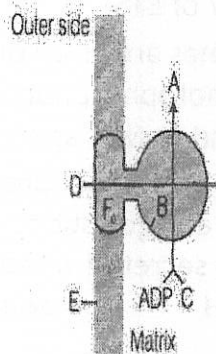
**Q.16** **DIRECTION :** Read the following and answer any four questions from 16(i) to 16(v) given below:  
 Observe the given diagram of a nephron and answer the question that follows.



- (i) Identify the correct pair  
 (a) A-Blood flowing in it is poor in waste products.  
 (b) B-Fine branches of renal vein.  
 (c) C-Supply blood to glomerulus.  
 (d) D-Highly coiled structure.
  - (ii) Renal corpuscle constitutes  
 (a) glomerulus and Malpighian body  
 (b) glomerulus and Bowman's capsule  
 (c) Bowman's capsule and Malpighian body  
 (d) glomerulus only
  - (iii) Which of the following structures are present in the cortical region of the kidney?  
 (I) PCT    (II) DCT    (III) Collecting duct    (IV) Loop of Henle
- Codes**
- (a) Only I      (b) I and II      (III) I, II and III      (d) III and IV
- (iv) What is the net glomerular filtration rate in an average adult?  
 (a) 75 mL min<sup>-1</sup>    (b) 50 mL min<sup>-1</sup>    (c) 125 mL min<sup>-1</sup>    (d) 100 mL min<sup>-1</sup>
  - (v) Which of the following is incorrect with regard to nephron?  
 (a) They are structural and functional units of kidney.  
 (b) Cortical nephrons have shorter loop Henle whereas. Juxtamedullary nephrons have longer loop of Henle.  
 (c) A human kidney has about two million nephrons.  
 (d) DCT opens up into the collecting duct.

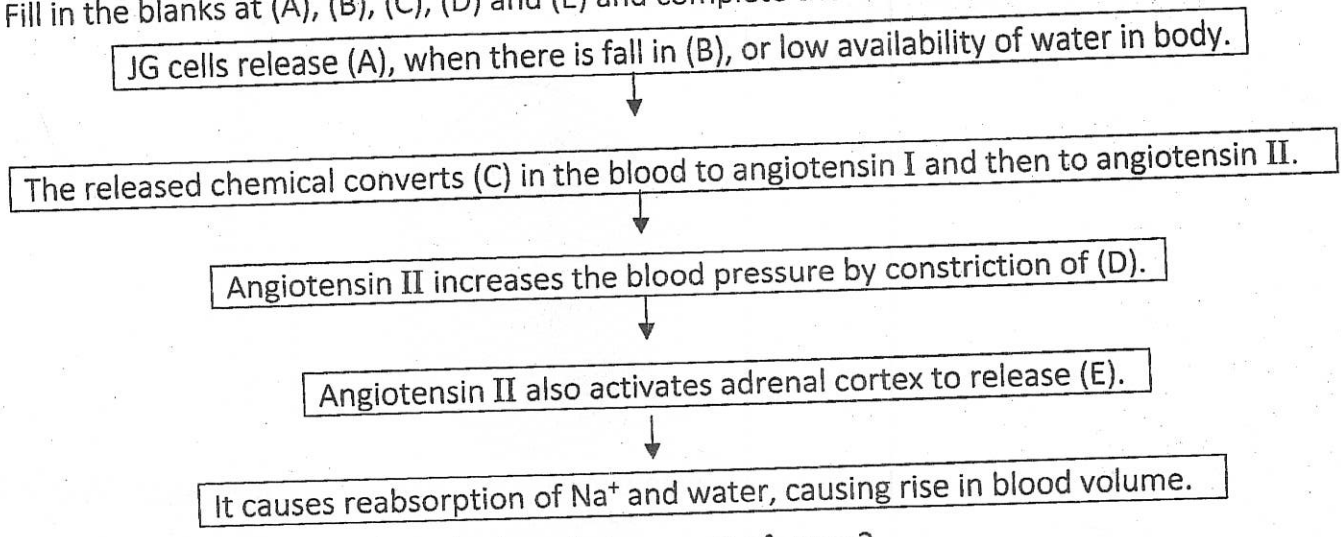
**SECTION – B**

**Q.17** Given below is a diagram showing ATP synthesis during aerobic respiration, replace the symbols A, B, C, D and E by appropriate terms.



- Q.18** To get a carpet like grass, lawns are mowed regularly. Is there any scientific explanation for this?
- Q.19** Which is the primary acceptor of CO<sub>2</sub> in Calvin cycle? Name the enzyme and the product formed in this step?
- Q.20** What is the stroke volume of an adult human heart? Calculate it.

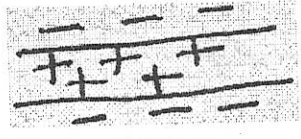
Q.21 Fill in the blanks at (A), (B), (C), (D) and (E) and complete the flow chart.



Q.22 What is the role of carbonic anhydrase in transport of gases?

Q.23 What is limbic system? What is its function?

OR



Explain conduction of nerve impulse as in the diagram of nerve fibre given above.

Q.24 Draw the diagram to show the structure of a thin myofilament and its components.

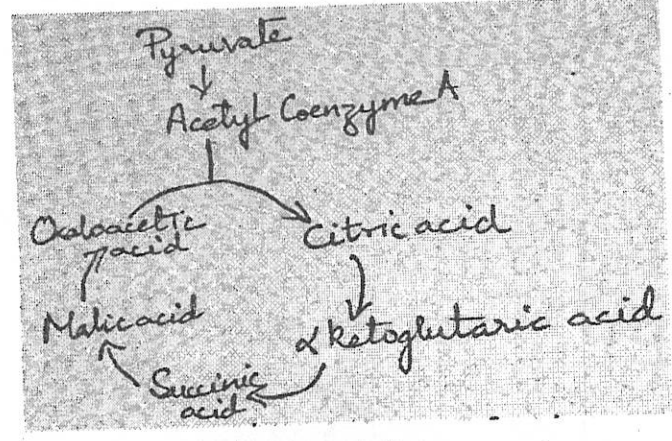
Q.25 Name the three zones of adrenal cortex. Also mention the types of hormones secreted and their affect.

OR

What is the role played by luteinizing hormones in males and females?

**SECTION – C**

Q.26 Observe the diagram of Kreb's cycle given below and answer the questions that follows.



- (a) What are the other names for Kreb's cycle?
- (b) Name the compound acting as connecting link between glycolysis and Kreb's cycle.
- (c) How many molecules of the following are produced in one turn of this cycle? ATP, NADH and FADH
- (d) Name the enzyme present in inner mitochondrial membrane.

Q.27 Which one of the plant growth regulators would you use if you are asked to

- (a) induce immediate stomatal closure in leaves
- (b) 'bolt' a resettle plant
- (c) quickly ripen the green chillies
- (d) increase yield of sugarcane
- (e) inhibit seed germination
- (f) kill dicot weeds

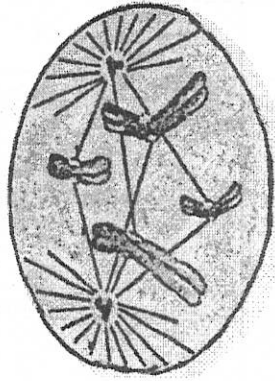
Q.28 Expand PEP. Where is it produced in C<sub>4</sub> Plants? What is its role in the biosynthetic process?

OR

A cyclic process is occurring in C<sub>3</sub> plants, which is light dependent and needs O<sub>2</sub>. This process does not produce energy, but rather consumes energy.

- (a) Can you name the given process?
- (b) Is it essential or survival?
- (c) What are the end products of this process?
- (d) Where does it occur?

- Q.29 (a) Label the diagram and also determine the stage at which this structure is visible.  
 (b) What is interkinesis?  
 (c) How is cytokinesis accomplished in animal cells.



- Q.30 Represent schematically the Z scheme in light reaction of photosynthesis. Why is it called so?

**SECTION – D**

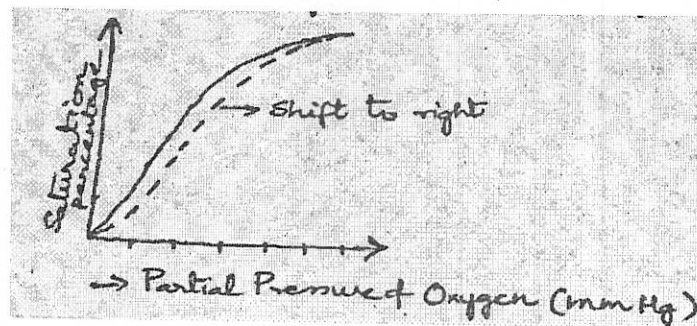
- Q.31 (a) What does QRS complex represent in a ECG?  
 (b) What is joint diastole?  
 (c) Write two features that distinguish SA node and AV node.  
 (d) Name the different sounds of heart beat. How are they produced?

OR

- (a) Draw a labelled diagram to show the impulse conducting system in human heart.  
 (b) How is heart attack different from heart failure?

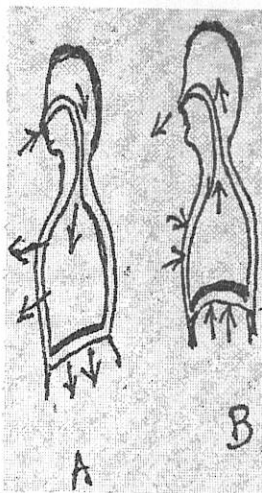
- Q.32 Study the graph carefully and answer the following questions.

- (a) What does the graph indicate?  
 (b) When does the curve shift to the right?  
 (c) Does the affinity of hemoglobin for oxygen increase or decrease when the curve shift to the right?



OR

Study the figure and answer the following questions:



- (a) What is being depicted by the figure?  
 (b) What is being shown in the figure A? How is it accomplished?  
 (c) What is being shown in figure B? How is it carried out?
- Q.33 Mention the name of three stages of Interphase. Explain the events of each stage.

OR

- (a) What would be the amount of DNA and chromosome in each stage of Interphase, if the initial amount is  $2C$  and  $2n$ , respectively?  
 (b) Distinguish anaphase of mitosis from anaphase-I of meiosis with diagrams.



## DELHI PUBLIC SCHOOL, BHILAI

DATE : 07.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – GEOGRAPHY

Time : 3 Hrs.  
Max. Marks : 70

### General Instructions:--

- Question paper is divided into 5 sections : A, B, C, D & E
- In Section A : Q.No. 1 to 6 are very short answer type questions carrying 2 marks each.
- In Section B : Q.No.7 is source based question.
- In Section C : Q.No. 8 to 11 are short answer type questions.
- In Section D : Q.No. 12 to 17 are long answer type questions.
- In Section E : Q.No.18 is map based question.

### SECTION – A

(2x6=12)

- Q.01 Differentiate between naturally induced fertility and culturally induced fertility.
- Q.02 What is natural vegetation? What are the climatic conditions required for evergreen forest?
- Q.03 What is the difference between khadar and bhangar?
- Q.04 What are different type of soil erosion?
- Q.05 What is the importance of atmosphere on living beings?
- Q.06 Write a short note on dust particles.

OR

Write a short note on water vapour.

### SECTION – B

(1x6=06)

- Q.07 Read the paragraph given below and answer the following questions :

#### FOREST & LIFE

To a vast number of tribal people, the forest is the home, a livelihood, their very existence. It provides them food, fruits, edible leaves, honey, nourishing roots & wild gums. It provides them with material to build their houses & items for practising their arts. The importance of forests in tribal economy is well known as they are the sources of sustenance and livelihood for tribal communities. It is believed that the tribal live in harmony with nature and protect forests. Out of total 593 districts 187 (as per 2001 census) are tribal districts. They account for 59.8% of total forest cover of the country whereas geographical area of 187 tribal districts form only 33.6% of geographical area of the country. It demonstrates that tribal districts are generally rich in forest cover. Forest and tribal are closely related. The age old knowledge of tribal regarding forests can be used in the development of forests. Rather than treating tribal as minor forest produce collectors they should be made grower of minor forest produce and encourage to participate in conservation.

- Q.7 (i) How is forest importance for tribal?
- (ii) How many districts are tribal districts?
- (iii) How it can be said that tribal districts are rich in forest cover?
- (iv) How the age old knowledge of tribal can be used?
- (v) How tribal live in harmony with forest & protect them?
- (vi) How the geographical area of forest with & without tribal districts are related?

### SECTION – C

(3x4=12)

- Q.08 What are different types of biodiversity?
- Q.09 Which soil is dominant in India? Where it is found? Describe its properties.

OR

If the balance between the process of soil formation and soil erosion is disturbed, the soil erosion becomes a menace. Discuss.

Contd...2

- Q.10 What is economic importance of biodiversity?
- Q.11 What is the difference between terrestrial ecosystem and aquatic ecosystem?

SECTION – D

(5x6=30)

- Q.12 Distinguish between Relative humidity and absolute humidity. What are different forms of condensation?
- Q.13 What is a tide? What are different types of tides?

OR

What is an ocean current? How ocean currents are formed?

- Q.14 Differentiate between grazing food chain and detritus food chain. Discuss nitrogen cycle.
- Q.15 Discuss temperature structure of the ocean. What are the factors affecting ocean salinity?
- Q.16 What are the factors which control temperature distribution on the earth surface? Discuss the processes by which earth atmospheric system maintains heat balance.
- Q.17 What is geostrophic wind? What are the forces affecting the velocity and direction of wind?

SECTION – E

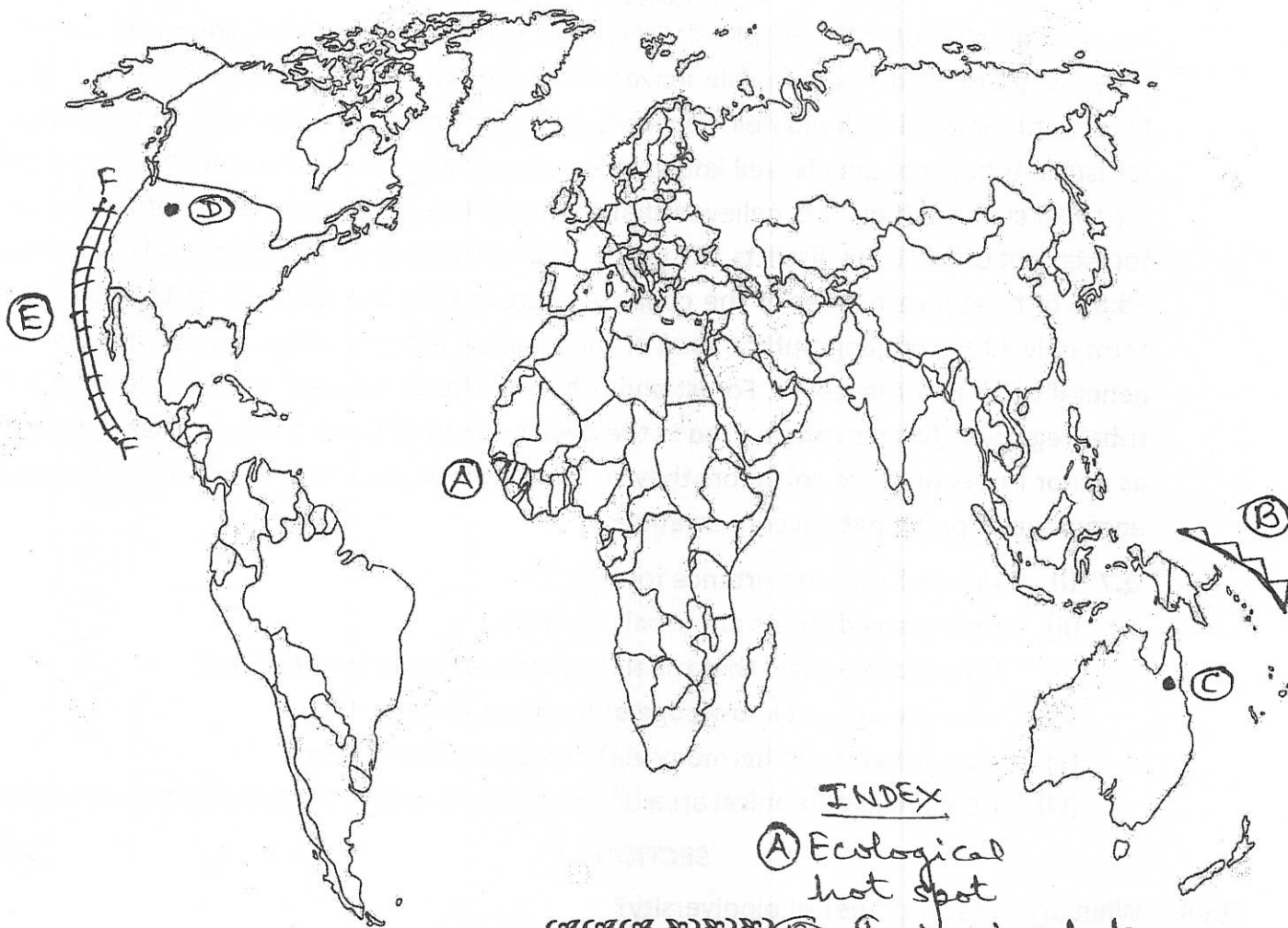
Q.18 (i) On the given political map of the world, identify the features marked as A,B,C, D and E.

(1x5=05)

(ii) On the political map of India, locate & label the following features-

(1x5=05)

- (a) Littoral & swamp forest
- (b) Agasthyamalai biosphere reserve
- (c) Laterite soil
- (d) Manas biosphere reserve
- (e) Arid soil



INDEX

- (A) Ecological hot spot
- (B) Tectonic plate
- (C) Ecological hot spot
- (D) Hot spot
- (E) Fault



# DELHI PUBLIC SCHOOL, BHILAI

DATE : 14.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – ECONOMICS

Time : 3 Hrs.  
Max. Marks : 80

### General instructions-

1. This is subjective paper carrying 26 questions.
2. 2 marks question are short answer question and has to be answered in 50-60 words.
3. 3 marks questions are short answer question and has to be answered in 60-80 words.
4. 5 marks questions are Long answer question and has to be answered in 100-120 words.
5. All questions are compulsory.

### Section – A (Statistics)

- Q.01 Write any two principal merits of median. 2
- Q.02 What do you mean by absolute measure of dispersion? Mention any two absolute measures. 2
- Q.03 Interpret the value of r as -1 and 0. 2
- Q.04 What are the two desirable properties of base year? 2

**OR**

What is the barometer of economic progress? Why it is called so.

- Q.05 Calculate inter quartile range for the following- 2  
X- 28 18 20 24 27 30 15
- Q.06 What is partition value? Differentiate between lower quartile and upper quartile. 3
- Q.07 Calculate coefficient of range from the following- 3

X-	20-29	30-39	40-49	50-59	60-69
f-	8	12	20	7	3

- Q.08 Write the steps for calculating mean deviation for frequency array. Also write formula. 3

**OR**

Calculate coefficient of mean deviation using mean for the following-

S No.	1	2	3	4	5	6	7	8	9
Wages-	40	42	45	47	50	51	54	55	57

- Q.09 For the given examples, find the types of correlation. Also give the reasons. 3  
a. As price falls, supply for product 'A' increases.  
b. Effect of adequate irrigation facilities, fertilizers and pesticides on per hectare productivity of wheat.
- Q.10 Explain difficulties in construction of index no. on the basis of- 3  
a. Selection of goods and services  
b. Selection of prices of goods and services

- Q.11 Calculate median,  $Q_1$  and  $Q_3$  from the following – 5

Marks less than	80	70	60	50	40	30	20	10
No. of students	100	90	80	60	32	20	13	5

**OR**

Define mode. Calculate mode for the following using grouping method-

CI-	>0	>10	>20	>30	>40	>50	>60
f-	55	50	38	24	14	6	0

- Q.12 Define standard deviation. Calculate standard deviation for the following- 5

MV-	5	15	25	35	45	55	65	75
f-	5	10	20	40	30	20	10	4

Contd...2







## DELHI PUBLIC SCHOOL, BHILAI

DATE : 03.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – ACCOUNTANCY

Time : 3 Hrs.  
Max. Marks : 80

### GENERAL INSTRUCTIONS:

1. This question paper comprises two Parts- A and B. There are 24 questions in the question paper.
2. All questions are compulsory.
3. Marks are indicated against each question.
4. There is no overall choice. However, an internal choice has been provided in five questions of three marks and two questions of five marks.
5. All parts of the questions should be attempted at one place.

### PART-A

1. Explain two advantages of Bill of Exchange? (2)
2. Give the meaning and utility of suspense account? (2)
3. Is trial balance a conclusive proof of the accuracy of the Books of Account? If not, what are the errors which remain undetected in spite of its agreement? (3)

OR

Name three types of errors with example which do not affect the Trial Balance?

4. What are the different options available to the receiver of a Bill of Exchange? (3)

OR

Distinguish between bills of exchange and a promissory note? (any three)

5. Gurnam from Ludhiana is a whole seller of Grocery business during the Covid pandemic small-scale businesses were facing financial crisis so Gurnam decide to follow liberal credit policy for his retailers. He extended previous credit period policy of 1 Month to 3 Months. On 1st January, 2021, he sold goods of ₹ 50,000 to Bhavna and drawn two bills of ₹ 15,000 and 35,000 for 3 months and 4 months period respectively. On 23rd January, 2021 he endorsed the first bill to Raman in full settlement of his account of ₹ 16,000.

On 14th February, 2021 Gurnam was in need of money so he decided to discount second bill @ 10%P.a. Bhavna met the first bill on maturity but on the maturity date of second bill she failed to meet the second bill and bill was dishonored so noting charges of ₹ 500 were paid by bank.

You are required to answer the following questions from the above information.

- (i) With what amount Raman account will be debited when bill is endorsed do him
  - (ii) Calculate the amount of discount at which the second bill is discounted?
  - (iii) What entry will be passed in the books of Gurnam at the time of dishonour of second bill?
  - (iv) What is the nature of Discounting Charges?
  - (v) What entry will be passed in the books of Raman on maturity of first bill? (5)
6. On 1<sup>st</sup> January, 2021 Samar accepted two bills drawn for ₹ 7,200; No.1 for ₹ 2,400 for one month No.2 for ₹ 4,800 for three months drawn by Suraj. On 15<sup>th</sup> January, 2021 Suraj endorsed first bill to his creditor Moon in full settlement of his account for ₹ 2,550, Suraj discounted his second bill on 1st February, 2021 from his banker with ₹ 4,660.

First bill was met by Samar on maturity whereas second bill was dishonoured on due date ₹ 40 being noting charges.

Pass entries in the books of Suraj. (5)

OR

Explain the following terms:

- (a) Discounting of bill,
- (b) Endorsement of a bill.
- (c) Days of Grace.
- (d) Dishonour of a bill of exchange.
- (e) Noting of bill.

Contd...2

7. Give the journal entries to rectify the following errors and prepare suspense account:
- (a) Goods bought from a merchant for ₹ 550 had been posted to the credit of his account ₹ 55.
  - (b) An item of ₹ 100 entered in the sales return book had been posted to the debit of the customer who returned the goods.
  - (c) ₹ 600 paid by a customer had been omitted to record in the books.
  - (d) ₹ 200 discount received from a creditor has been duly entered in his account but was not posted to discount account. (5)
8. Pass journal entries to rectify the following errors:
- (i) Purchase of office stationery ₹ 1,000 debited to purchase A/c.
  - (ii) Goods of ₹ 4,000 returned by Pooja were included in stock, but no entry was made in the books.
  - (iii) Goods purchased from Roshan for ₹ 5,000 were entered in the sales book.
  - (iv) An amount of ₹1,600 received from Parul which was written of bad debts last year has been credited to her account.
  - (v) Payment of wages to Anjan for construction of building debited to his personal account with ₹ 3,000. (5)

**PART- B**

9. What do you mean by Revenue Expenditure? Give two examples of Revenue Expenses? (2)
10. Explain the concept of Marshalling of Assets and Liabilities through examples. (2)
11. Give any two limitations of Computerized Accounting system. (2)
12. Give two importance of adjustment in financial statement? (2)
13. Give two difference between Statement of Affairs and Balance Sheet. (2)
14. Name the two main accounts maintained in 'Accounts from Incomplete Records'. (2)
15. Define Readymade software, Customized software and Tailor-made software. (3)
16. Write notes on: (3)
- (a) Contingent liability
  - (b) Capital Expenditure
  - (c) Operating Profit
- OR**
- Distinguish between Trial Balance and Balance Sheet.
17. Explain the use of Financial Statements for Owner, Employees and Government? (3)
18. Double Entry System is superior to Single Entry System. Explain with two suitable examples? (3)
- OR**
- Give three advantages of Single-Entry System of Accounting?
19. From the following information calculate cost of revenue from operation:
- Adjusted purchases ₹ 2,00,000; Manufacturing expenses ₹ 20,000; Import duty ₹ 12,000; Carriage of sales ₹ 8,000; Selling expenses ₹ 18,000; Factory expenses ₹ 12,000; Sales ₹ 3,04,000; Closing stock ₹ 20,000 and Sales return ₹ 4,000. (3)
- OR**
- Calculate closing stock and cost of goods sold from the following:
- Opening Stock ₹ 5,000; Sales ₹16,000; Carriage inwards ₹ 1,000; Sales Return ₹1,000; Gross Profit ₹ 6,000; Purchases ₹ 10,000 and Purchase Return ₹ 900.
20. Anil keeps his books on single entry system, informs you that his capital on 31st March, 2020 is ₹1,87,000 and his capital on 1st April, 2019 was ₹ 1,65,000. He further informs you that he withdrew ₹ 1,000 per month from 1st November, 2019 for his household purpose. He introduced ₹ 20,000 as further capital on 1st October, 2019. You are requested to calculate profit or loss for the year ended 31st March, 2020. (3)

21. Prepare Financial Statement of Anand Bros. from the following information on 31st March, 2021:

Particulars	Dr. Balance	Particular	Cr. Balance
Land and Building	9,00,000	Creditors	2,35,000
Opening Stock	1,70,000	Sales	5,90,000
Machinery	3,50,000	8% Bank Loan	2,00,000
Debtors	2,50,000	Outstanding Wages	4,000
Purchases	2,90,000	Bills Payable	1,60,000
Office Expenses	10,000	Provision for doubtful debts	6,000
Export Duty	15,000	Commission Received	55,000
Carriage Inwards	40,000	Capital	8,21,000
Advertisement Expenses	20,000	General Reserve	1,00,000
Patent	60,000		
Interest on Loan	11,000		
Cash	22,000		
Bank Balance	18,000		
Bad Debts	15,000		
	<u>21,71,000</u>		<u>21,71,000</u>

**Additional Information:**

- (i) Closing Stock Market Value at the end of the year was ₹ 2,20,000 which is ₹ 20,000 more than cost price.
- (ii) Further Bad Debts ₹ 4,000. Provision for Doubtful debts to be created @6%.
- (iii) Commission received includes ₹ 2,500 advance for the next year. (5)
22. Give Journal entries for the following adjustments in final accounts:
- (i) Interest on Capital ₹5,000.
- (ii) ₹ 7,000 for rent have been received in advance.
- (iii) Insurance amounting to ₹ 3,000 is paid in advance.
- (iv) Provide 10% p.a. Depreciation under W.D.V method on Machinery (Costing ₹ 5,00,000) book value ₹ 4,05,000.
- (v) Profit and Loss Accounts shows net profit of ₹ 1,76,000 before charging commission of manager. Provide for manager's commission at 10% on the net profit after charging such commission. (5)
23. Kuldeep Singh from (Anandpur Saheb Punjab) has provided the following information on 31st March, 2021:
- He has following balances on the above-mentioned date:
- Patents ₹1,00,000; Building ₹ 3,00,000 and Furniture ₹ 2,00,000 respectively and Capital of ₹ 2,50,000. The firm of Kuldeep Singh is following the accrual basis of accounting. Total Purchases made by him during year were ₹ 3,17,750. He sold goods on credit ₹ 4,25,000 out of which ₹ 25,000 were returned by the customers located in Jalandhar, and he also sold goods of ₹ 1,00,000 for cash. Firm showed opening Stock of ₹ 63,000 and Closing Stock is 1.5 time of Opening stock. There were bad debts of ₹ 6,000. He incurred the following expenses as per the requirement, for smooth operation of his business.
- Expenses: Freight outward ₹ 1,550; Factory Power Expenses ₹ 3,050; Packaging (On sales) ₹ 17,500; Stationery ₹4,200; Wages and Salaries ₹ 25,000. At the end of the year 31st March, 2021 Depreciation on Fixed Tangible Assets to be charged @10%. Interest on Capital is to be allowed @5%p.a.
- You are required to answer the following questions from the above information:
- (i) What is the value of Closing Stock?
- (ii) Interest on Capital is show on the \_\_\_\_\_ side of \_\_\_\_\_ account while preparing Final Accounts.
- (iii) How much is the amount of cost of goods sold?
- (iv) The amount of Direct Expenses is \_\_\_\_\_.
- (v) What amount of Gross Profit earned by firm for the year ended 31st March, 2021? (5)
24. Differentiate between computerized Accounting and Manual Accounting. (any five)
- OR**
- Explain the main elements of a Computer System? (5)



## DELHI PUBLIC SCHOOL, BHILAI

DATE : 09.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – BUSINESS STUDIES

Time : 3 Hrs.  
Max. Marks : 80

### GENERAL INSTRUCTIONS:

1. The question paper contains 24 questions.
2. Answers should be brief and to the point.
3. Answers to the questions carrying 2 marks maybe from 50 to 75 words.
4. Answers to the questions carrying 3 marks maybe about 150 words.
5. Answers to the questions carrying 5 marks maybe about 200 words.
6. Answer all parts of a question together.

### SECTION – A

01. Meena owns a small farm to grow fruits. She wants to purchase a neighbouring land and convert it to a farm for increasing the variety of fruits. She wishes to purchase a tractor and some other machines for the same. She will also need money to purchase the land. Which source of finance is required by Meena? Give reason. (2)
02. \_\_\_\_\_ is the funding of a project by raising money from a large number of people for a common goal. Explain the same. (2)
03. Explain Internal Trade. Identify its types. (2)
04. Manufacturing and trade takes place beyond the boundaries of one's own country. Identify the concept and state any one merit of the same. (2)
05. For which source of finance, a company is required to mortgage its assets? Explain the same. (2)
06. M/s ABS is a small enterprise engaged in the production of springs. It supplies its entire output to tractor manufacturers. M/s ABS can be classified as a \_\_\_\_\_ industry. Write briefly about it. (2)
07. Mercury Ltd. decided to donate 2% of its sales to Child Rights and You (CRY) for improving the condition of children in India. This initiative by the company was highly appreciated by the public and their sales increased by 10%. Identify the interest group towards which Mercury Ltd. is discharging its social responsibility? State one more responsibility towards this group. (2)
08. They are petty retailers who have independent shops of a temporary nature and change their business from one locality to another. Explain the same. (2)

### SECTION – B

09. Lakshmi Ltd. is an IT company having many shareholders. In reality the financial position of the company is weak. But in the meeting with the shareholders it presented a very good picture of the financial affairs of the company to attract more of them. (2+1)
  - (a) Is the company showing a socially desirable behaviour? Give reason.
  - (b) Social responsibility towards which group is ignored in the above para.
10. Karan wants higher and more certain returns and also the safety of capital. What will he choose equity shares, preference shares or debentures? Explain the same and mention the period of finance which it belongs to. (1+2)

OR

What are debentures? What is the return on debentures called? What is the relation of debenture holders to the company? (1x3)

11. Discuss any three advantages of international business. (3)
12. Payal Food Industries set up a food and beverages plant in the rural area of Madhya Pradesh and opted for labour intensive technique due to easy availability of labour and to provide employment to local people. The Board of Directors decided to invest ₹ 50 lakhs to acquire plant and machinery, ₹ 1 crore to buy land, ₹ 25 lakhs to buy raw materials and ₹ 20 lakhs to maintain day to day expenses. (1+1+1)
  - (a) Name the Act of industries which is applicable to the above industry.
  - (b) Which category of part (a) will the above industry come.
  - (c) State the investment limits in this category.

OR

- (a) What do you mean by Intellectual Property Rights?
- (b) Mention the categories of Intellectual Property. (1+2)

Contd...2

13. Britannia Industries Ltd. is committed to help secure every child's right to growth and development through good food everyday. The company is working in partnership with Global Alliance for Improved Nutrition (GAIN) and the Nandi Foundation to supply iron fortified Tiger biscuits to supplement the Mid-Day Meal program in schools. In keeping with the core essence of 'Swasth Khao Tan Man Jagao', the company constantly strives to find sustainable opportunities to drive home the message of nutrition and good food habits among children at the right age.

(1 1/2 x2=3)

In context of the above case

(a) Identify the kind of social responsibility being discharged by Britannia Industries Ltd. Explain it.

(b) Briefly explain the remaining kinds of social responsibilities.

14. Write the difference between shares and debentures on the basis of: (3)

(a) Nature of fund (b) Voting rights (c) Status of holders

15. Write briefly about the following: (3)

(a) Boot strapping (b) Angel Investors (c) Entrepreneurship

16. Easy Day, Big Bazaar, D Mart etc are the examples of which type of fixed shops? Give any two merits of the same. (1+2)

### SECTION - C

17. Prakriti Ltd. is a well-known company dealing in all kinds of organic products. The company sells its products through a chain of outlets located in well populated areas, which is in the vicinity of residential areas for the convenience of customers across the country. All the branches of the company are under the control of the head office.

In context of the above case:

(a) Identify the retail outlet being described in the above lines.

(b) State any four features of the type identified in (a) besides the one which has been mentioned in the paragraph. (1+4)

18. What do you mean by Retained Earnings? Explain any two merits and demerits of Retained Earnings as a method of business finance. (1+4)

OR

What are equity shares? Write about any four merits of the same. (1+4)

19. Ajay is a trader dealing in low cost fashionable footwear. In order to sell his merchandise he opens his shop on fixed days in different markets. (1+1+3)

In context of the above case :

(a) How would you classify Ajay as a type of retailer?

(b) Name the category of the type of retail trade as identified in part (a) of the question under which he should be placed.

(c) Also, briefly explain the other types of retailers which fall in the same category as Ajay as identified in part (a) of the question.

20. Supreme Ltd. is a well-known company in telecom sector in India. The company is committed to treat everyone fairly with respect and dignity regardless of differences in positions, age, caste, creed, gender or otherwise. It endeavors to foster a participatory work environment where trust and confidence between team members is spontaneous. It not only abides by all the laws governing in India but is also fully committed to achieving and participating in every conceivable way in the progress and integrity of the nation. It constantly reviews and revises all its print and electronic promotional materials like advertisements, brochures etc to make sure that they are clear, precise and free from any kind of misrepresentation(s). The company remains actively involved in social issues and activities. It maintains financial records and follows strict accounting control to ensure effective and efficient utilization of funds, thereby maximizing returns to their shareholders.

In context of the above case: (5)

By quoting lines from the paragraph identify the different interest groups towards which the company is fulfilling its social responsibilities.

OR

What is Social Responsibility? Explain the social responsibility of business towards Shareholders and Employees (two points each.) (1+4)

21. State the preferential rights of Preference shareholders. What are the different types of Preference Shares?(2+3)

OR

What do you mean by debentures? Explain the different types of debentures. (1+4)

22. What are the incentives provided by the Government for industries in backward and hilly areas? (5)

OR

What is the role of small business in India? (5)

23. Tarun owns a coaching centre in Alwar. He has often observed students buying eatables from street vendors before and after the classes at his centre. This habit of the students used to disturb him as that food was not hygienic. Thus, for the benefit of the students he recently installed an automated machine at his centre which dispenses various kinds of food items on inserting a coin. (2+3)

In context of the above case

(a) Identify the 'automated machine' referred to in the above lines? Explain it.

(b) Write about the features of the above mentioned type of retailing.

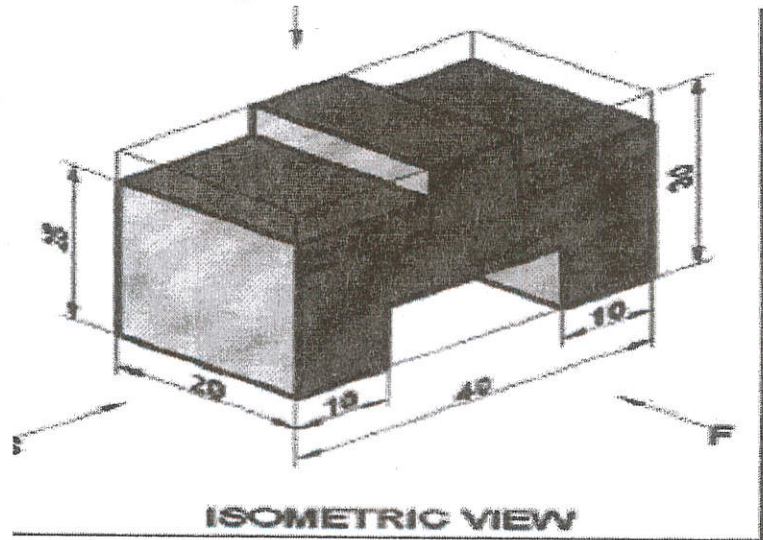
24. Explain GDR as a source of international finance. (5)



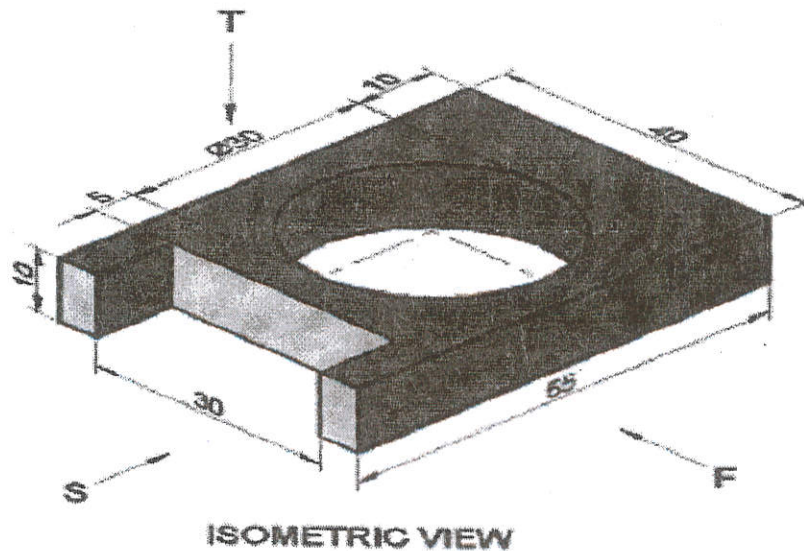
**General Instructions:**

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

- Q1. A pentagonal prism having a 30mm edge of its base and an axis of 60mm length is resting on one of its rectangular faces with the axis perpendicular to the side plane. Draw the projections of the prism if it is 20mm above HP and 25mm in front of VP. (10)
- Q2. A Triangular prism with base side 45mm and length of axis of 65mm is resting on its rectangular face on HP with its axis perpendicular to VP. The prism is cut by a horizontal section plane, 20mm distance above the ground. Draw its front view and sectional top view. (10)
- Q3. A Cone of base diameter 50mm, is resting on its base on HP and its 70mm long axis is perpendicular to HP. It is cut by a section plane perpendicular to HP and parallel to VP, at a distance of 10mm from the front. Draw its top view and sectional front view. (10)
- Q4. Draw the orthographic views of the given isometric view of machine block. (10)



- Q5. Draw the orthographic views of given isometric view of machine block. (10)



- Q6. (a) Draw an isometric scale which can measure up to 100mm length. (5)
- (b) Draw the isometric projection of a circle of diameter 48mm in HP, by using four center method. (7)
- (c) Draw the isometric projection of a regular hexagon of base side 34mm in VP. Keeping two of its base edges perpendicular to HP. (8)



# DELHI PUBLIC SCHOOL, BHILAI

DATE : 14.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – COMPUTER SCIENCE

Time : 3 Hrs.  
Max. Marks : 70

### General instructions-

1. All questions are compulsory.
2. Programming language is Python.
3. Answer questions sequentially.

1.

- a) Write a code fragment to generate a random floating number between 45.0 and 95.0. Print this number along with its nearest integer greater than it. 2
- b) Write a python program code to calculate mean median and mode of a list M with n elements. 3
- c) What is Anti-Virus software? 2
- d) Describe the following cyber crimes : a) Cyber Bullying b) Cyber Stalking 2
- e) What is digital property? Give two examples of digital properties. 2
- f) "Privacy is the protection of personal information given online. In e-commerce especially, it is related to a company's policies on the use of user data." 2
  - i. Why is the above given statement important?
  - ii. What is the need to safe guard user privacy?
- g) Match the following ½ x4=2

A	B
i) Plagiarism	i) Fakers , by offering special rewards or money prize asked for personal information, such as bank account information
ii) Hacking	ii) Copy and paste information from the Internet into your report and then organize it
iii) Credit card fraud	iii) The trail that is created when a person uses the internet.
iv) Digital Foot Print	iv) Breaking into computers to read private emails and other files.

- h) Viruses, pharming and phishing are all examples of potential Internet security issues. 3  
Explain what is meant by each of these three terms.
- i) What measures should you take to keep data secure?(Write any two) 2

2.

- a) Explain the use of following methods used in the list 2
  - i. remove()    ii. reverse() with example
- b) What is the difference between append () and extend() function? 3  
Illustrate with an example .
- c) Predict the output - 2
  - i. 2

```
M=['p','r','o','b','l','e','m']
M[2:3]=[]
print(M)
M[2:5]=[]
print(M)
```
  - ii. 2

```
a, b, c = [1,2], [1,2], [1,2]
print (a==b)
print (a is b)
```

Contd...2



d) M= [12,13,45,67,123,4,90,1,62,18] 3  
Write a program to display the maximum and minimum values from a specified range of indexes.

e) Write a program that prints the sum of the even indexed elements of a list L , minus the sum of the odd indexed elements: For example – L=[1,2,3,4,5,6,7,8,9] 3  
Result = 5  
(sumeven = 1+3+5+7+9=25 sumo=2+4+6+8=20 ,sume-sumo=25-20=5)

OR

Write a program to input a list of numbers and swap elements at the even location with the elements at the odd location.

Eg. Original List: [12,23,45,16,22,34]

Altered List: [23,12,16,45,34,22]

3.

a) What do you mean by unpacking a tuple? Give a suitable example. 2

b) How are tuples different from lists when both are sequences? 2

c) Write a program to create a tuple storing first 9 terms of Fibonacci series. 2

d) Predict the output –

i. Consider the following Tuples t1 and t1 : 3  
>>>t1=(23,1,45,67,45,9,55,45)  
>>>t2=(100,200)  
>>>print(t1.index(45))  
>>>print(t1+t2)  
>>>print(min(t1))

ii. >>>T1 = (6,7) 3  
>>>T2 = T1\*3  
>>>T3 = T2\*(3)  
>>>print (T1, T2, T3)

e. Given a nested tuple  
stud=(("Anish",67.8),("shourya",90.7),("Rehan",77.5),("Bidisha",78.6),("Manay",66)).  
Write a program that displays the names of students along with percent whose percent>=75 3

OR

Write a program to check if the elements in the first half of a tuple are in ascending order, if not then report with a suitable message.

Eg. T=[11,12,13,45,10,56,1,24]

Output : Tuple has first half elements in ascending order

4.

a) Explain the use of get() and update () used in dictionary with suitable example. 2+2

b) Predict the output for the following codes :

i) d1 = {5 : "number", "a" : "string", (1, 2) : 'tuple'} 2  
print ("Dictionary contents")  
for x in d1.keys() :  
    print (x, ':', d1[x], end = ' ')  
    print (d1[x] \* 3)  
    print ()

ii)

```
num= {33:455,23:670,13:500,3:311}
s=len(num)
for i in range(s):
    x=num.popitem()
    if len(num)>0:
        print("Key-value pair ->",x)
        print("Now dictionary size is ",len(num))
```

OR

Write a program to read a sentence and then create a dictionary containing the frequency of letters in the sentence. Ignore other symbols.

Eg. S="This is sentence"]

D1={"T":3,"I":2,"S":3,"E":3,"N":2,"N":1}

c) Given two dictionaries D1 and D2. Write a program that lists the overlapping keys of the two dictionaries, i.e., if a key of D1 is also a key of D2, then print the list otherwise display a suitable message. 3

d) Assign a dictionary with name and age of any 10 students in the program itself and then print name of students along with age whose age is more than 15 years. 3

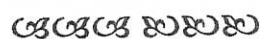
5.

a) What will the following list look after 2 passes of insertion sort algorithm (ascending order)? 2  
Show the list after every pass.  
M=[16,19,11,15,10]

OR

Write a program to illustrate Bubble Sort.

b) Write a program to sort a list of strings , on the basis of length of strings. That is the smallest – length string should be the first string and largest length string the last. 3  
Eg:Original List ['HELLO', 'Hi', 'HOLA', 'Namastey', 'Hi!']  
Sorted List ['Hi', 'Hi!', 'HOLA', 'HELLO', 'Namastey']





# DELHI PUBLIC SCHOOL, BHILAI

DATE : 07.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – INFORMATICS PRACTICES  
(CODE – 065)

Time : 3 Hrs.  
Max. Marks : 70

### General Instructions

- The question paper is divided into 3 sections – A, B and C
- Section A, consists of 11 questions (1-11). Each question based on RDBMS Theory
- Section B, consists of 15 questions (12-25). Each question based on MySQL.
- Section C, consists of 8 questions ( 26-33). Each question based on 'Emerging Trends'
- Internal choices have been given.

### Section - A

- Q1. Define the following terms: (any 4) 1x4=4  
 a. Relation    b. Domain    c. Metadata    d. Tuple    e. RDBMS
- Q2. What is a database system? What is it's need? 2
- Q3. What do you understand by Data Inconsistency and Data Redundancy? 2
- Q4. Distinguish the following: 2x2=4  
 a. DDL commands, DML commands  
 b. Candidate key, Alternate key
- Q5. Mention any 2 properties of a Relation in RDBMS. 2
- Q6. Explain any 4 Numeric Data types used in MySQL with suitable example of each. 2
- Q7. How comments are added in MySQL. 2
- Q8. What are two wild characters used with 'LIKE' operator? Give suitable example. 2
- Q9. Differentiate between CHAR and VARCHAR datatype. 2
- Q10. What do you understand by Database schema and Database instance? 2
- Q11. What do you understand by the term 'Literal' and 'NULL'? 1

### Section - B

- Q12. Create a table named 'Vision' as given instance chart – 2

Column Name	ID	Category	No of faculty	Skills
Data type	integer	Varchar	integer	Char
Length	3	25	4	15

- Q13. Find output of the given SQL statements based on the table "Products" 1x5=5

**Table : Products**

Pid	PName	Category	Qty	Price
1	Keyboard	IO	15	700
2	Mouse	IO	10	350
3	Wifi-router	NW	5	2600
4	Switch	NW	3	3000
5	Monitor	O	10	4500
6	Laser Printer	O	20	15000
7	Inkjet Printer	O	15	7000

- Select distinct Category from Products;
- Select Pname from Products where Price between 3000 and 7000;
- Select Pname as 'Product Name', Qty as 'Quantity', Price\*.05 as 'Discount' from Products where Category='IO';
- Select Category from Products order by Price desc;
- Select \*from Products where Qty>=15 and Price<=15000;

- Q14. Mr. Sanket , a HR Manager in a multinational company "Star-X world" has created the following table to store the records of employees: 1x5=5

**Table : Employee**

Eid	EName	Department	DOB	DOJ
Star1	Ivan	Sales	1994-08-28	2020-02-14
Star2	Melinda	IT	1997-10-15	2021-11-19
Star3	Raj	Accounts	1998-10-02	Null
Star4	Michael	Sales	2000-02-17	2020-05-01
Star5	Sajal	IT	2001-12-05	2018-06-13
Star6	John	Accounts	1995-01-03	2019-07-15
Star7	Julia	Sales	1985-11-13	2020-08-19

He wants to perform some queries based on the above given table. Help him to write SQL commands to perform his queries and manipulation –

- i. To display those employee's name whose name 3<sup>rd</sup> letter is 'a' and ending with letter 'n'.
- ii. Display only those tuples who joined before '2020-01-01'.
- iii. Change Department from 'IT' to 'AI'
- iv. Display only those employees information whose DOJ is not given
- v. Remove all records working in 'Sales' department.

Q15. Give SQL command to display system date and time. Also write format of date type column in MySQL.

Q16. Help Ritwik to display name of all databases of his system. Which SQL statement he should write? Also help him to activate/open the database 'ADMIN'. 2

Q17. Sunita forgot to add integrity constraint 'Primary key' to the column 'ACCNO' in 'MASTER' table. Help her to add it with suitable SQL command. (Assume table is already created) 1

Q18. Ananya Sony, a database analyst has created the following table: 'Scholars' 1x5=5

RegNo	SName	Stream	Optional	Marks
S1001	Akshat	Science	CS	99
S1002	Harshit	Commerce	IP	95
S1003	Devika	Humanities	IP	100
S1004	Manreen	Commerce	IP	98
S1005	Gaurav	Humanities	IP	92
S1006	Saurav	Science	CS	NULL
S1007	Bhaskar	Science	CS	95
S1008	Bhaskar	Science	CS	96

- i. She wants to display Name and Optional subject in ascending order of Stream.
- ii. Display different Optional subject available (without repetitions).
- iii. Display name of those scholars who are not in 'Commerce' stream.
- iv. Add a new row with the given values 'S1009', 'Manjeet', 'Science', 'PE', 92
- v. Display only those scholars name whose obtained marks above 95.

Q19. What do you understand by degree and cardinality in a relation of RDBMS? 2

Q20. Write SQL command to display structure of a table 'PUPIL'. 1

Q21. Name the dummy table used in MySQL to perform non table based query. 1

Q22. Write SQL command to add a new column 'Email' of data type VARCHAR and size 30 to the table 'Consumer'.

**OR**

Give SQL command to remove a column 'REMARK' along with its data of 'Trainee' table. 1

Q23. What output will be obtained by the given below SQL command?

Select 45%46 ;

Q24. In the given query which keyword to be inserted to work successfully – 1  
Insert into Coach \_\_\_\_\_ (11, 'Akhil', 90000);

Q25. The keyword LIKE can be used with WHERE clause to refer to a range of values. State True/False. 1

### Section - C

Q26. List two cloud based services you are using at present. 1

Q27. Differentiate between 'IoT' and 'WoT' 2

Q28. What is 'Block Chain Technology'? Mention atleast 4 benefits of it. 3

Q29. Distinguish 'Grid Computing' and 'Cloud Computing' 2

**OR**

Explain SaaS and Paas cloud services.

Q30. Give 4 examples of NLP in real life. 2

Q31. How Augmented Reality is different from Virtual reality? 2

Q32. Name some fields of ML applications. 1

Q33. What do you understand by sensors and smart sensors? 2



# DELHI PUBLIC SCHOOL, BHILAI

DATE : 07.03.2022  
CLASS : XI

ANNUAL EXAMINATION 2021-22  
SUBJECT – HOME SCIENCE

Time : 3 Hrs.  
Max. Marks : 70

## GENERAL INSTRUCTIONS:

1. All questions are compulsory.
2. There are total 36 questions.
3. Question paper is divided into three sections-A, B and C.
4. Section A has question no. 1 to 14 (objective type questions) and are of 1 mark each.
5. Section B has question no. 15 to 21 (case study based multiple choice questions) and are of 1 mark each.
6. Section C has question no. 22 to 27 of 2marks each, question no. 28 and 29 of 3 marks each, question no. 30 to 33 of 4 marks each question no. 34 to 36 of 5 marks each.

## SECTION A

- Q.01 Name the vaccine which is given: (1)  
(a) Soon after birth  
(b) Between 9 to 12 months
- Q.02 Define fads. (1)
- Q.03 Mention any two self-help features in children's clothing. (1)
- Q.04 Name four areas of development in the life of an individual. (1)
- Q.05 Why is cotton the most widely used fabric for children's clothing? (1)
- Q.06 What do you understand by cut-off-point? (1)
- Q.07 What is psychic income? (1)
- Q.08 Differentiate between the permissive parenting and restrictive parenting. (1)
- Q.09 Explain glucose tolerance. (1)
- Q.10 List two factors for the success of a budget. (1)
- Q.11 Give two examples of investments which have built in tax rebates. (1)
- Q.12 Describe the types of assets. (1)
- Q.13 Explain the term wellness. (1)
- Q.14 Define: (1)  
(a) Hypothetico-deductive reasoning.  
OR  
(b) Meta-thinking.

## SECTION B

	Complementary feeding is the process of gradually introducing other foods along with breast milk. Foods that are introduced are thus called complementary foods. It is important that in the process of complementary feeding good hygienic conditions must be maintained when using feeding bottles and utensils to avoid infection to the baby.	
Q.15	Complementary foods can be introduced by _____ months of age a) Four b) Five c) Six d) Seven	(1)
Q.16	In order to ensure the fulfilment of nutritional needs of infants, complementary foods should be calorie-dense and should provide at least _____ per cent of energy as proteins. a) Twenty b) Ten c) Sixty d) Seventy	(1)
Q.17	The ingredients of Malt food are: a) cereal malt, low fat groundnut flour and bengal gram b) cereal malt, low fat groundnut flour and jaggery c) cereal malt, low fat groundnut flour and legumes d) cereal malt, low fat groundnut flour and vegetables	(1)

	Care and maintenance of fabric products e.g., clothing, furnishing, or any other use within the household, is very important. Final selection and purchase of any product or material is largely based on its appearance in terms of colour and texture, its quality and its functionality.	
Q.18	Ink, rust, coal tar, medicine etc. are examples of: a) Vegetable stains b) Animal stains c) Oil stains d) Mineral stains	(1)
Q.19	Which of the following is not an alkaline reagent? a) Ammonia b) Borax c) Bran d) Baking soda	(1)
Q.20	_____agents are compounds with low grade or weak dyes that possess the property of fluorescence. a) Bleaching b) Oxidising c) Reducing d) Optical Brightening	(1)
Q.21	_____ is not really a starch but the addition of a small quantity in the starch solution helps to improve its stiffening action. a) Borax b) Gelatin c) Starch d) Gum acacia	(1)

**SECTION C**

- Q.22 Mention any four points you would consider for safety in clothing for children. (2)
- Q.23 Define neonate. classify childhood based on nutrient requirements as suggested by the Indian Council of Medical Research (ICMR). (2)
- Q.24 What is Mid-day Meal Scheme? How has the Mid-day Meal Scheme" boosted children's health as well as school performance? (2)
- Q.25 Describe the types of real income with examples. (2)
- Q.26 Give four examples of a family's income. (2)
- Q.27 Enlist Motor Development Milestones of a child from birth to 2 years (2)
- Q.28 What should be the features of clothes for children with special needs? (3)
- Q.29 Explain any three techniques of stain removal. (3)
- Q.30 Briefly explain four characteristics of the pre-schooler age child's thinking with an example each. (4)
- Q.31 Give four reasons for why you wear clothes. (4)
- Q.32 List any two categories of exercises. Explain their benefits and give two examples each. (4)
- Q.33 How can you ensure safety of the principal amount of investment? (4)
- Q.34 List the important deficiency diseases that may occur in childhood. (5)
- Q.35 Enumerate any five dimensions of wellness. (5)
- Q.36 What are the properties of cotton and linen? Mention any five. (5)



**DELHI PUBLIC SCHOOL, BHILAI**  
**ANNUAL EXAMINATION – 2021-22**  
**SUBJECT – PHYSICAL EDUCATION**

**Class : XI**  
**Date : 16.03.2022**

**Max. Marks : 70**  
**Time : 3 Hrs.**

**General Instructions :**

- (i) The question paper consists of 30 questions and all are compulsory.
- (ii) Question 1–12 carry 01 mark each and are Multiple-Choice Questions.
- (iii) Questions 13–16 carry 02 marks each and shall not exceed 40–60 words.
- (iv) Questions 17–26 carry 03 marks each and shall not exceed 80–100 words.
- (v) Questions 27–30 carry 05 marks each and shall not exceed 150–200 words.

Q.1 Name the teacher who is specially trained to work with CWSN.  
 (a) Physical Education teacher (b) Principal (c) Physiotherapist (d) Special educator

OR

The first Special Olympics Games were held in  
 (a) Chicago (b) Paris (c) New York (d) Washington D.C.

Q.2 Which year the name of Deaflympics came into existence?  
 (a) 2000 (b) 2001 (c) 2002 (d) 2003

Q.3 Out of following which one is not Ashtang Yoga?  
 (a) Yama (b) Niyama (c) Dhauti (d) Pratyahara

Q.4 Which Asana is associated with Eagle?  
 (a) Vrikshasana (b) Garudasana (c) Shashankasana (d) None of these

Q.5 Adventure sports are also known as  
 (a) Action sports (b) Boxing (c) Cricket (d) None of the above

Q.6 Which of the following is not water sport?  
 (a) River Rafting (b) Sky diving (c) Wind Surfing (d) None of these

Q.7 One should avoid injury by  
 (a) Exercising (b) Proper technique (c) Proper Equipment (d) All of these

OR

Which of the following adventure sports could be also an indoor activity?  
 (a) Trekking (b) Rock climbing (c) Paragliding (d) Surfing

Q.8 The Adolescence age starts from 12 years and ends up to the age of  
 (a) 14 years (b) 16 years (c) 19 years (d) 21 years

Q.9 Peer interaction and relationship reflects  
 (a) Group dynamics (b) Physical growth (c) Emotional development (d) Moral values

OR

Biological problems in adolescents are due to  
 (a) Slow physical growth (b) Rapid physical growth (c) No physical growth (d) None of the above

Q.10 The first case of doping in Modern Olympics came to light in  
 (a) 1904 (b) 1908 (c) 1912 (d) 1916

Q.11 The performance enhancement drug generally used by boxers and judo players to reduce their weight is  
 (a) Diuretic (b) Peptide hormone (c) Anabolic steroid (d) Beta-2 agonist

Q.12 A unique, personalized expression is a  
 (a) Technique (b) Style (c) Skill (d) Knowledge

Q.13 Identify the following adventure sports and write its name:



(a) .....



(b) .....



(c) .....

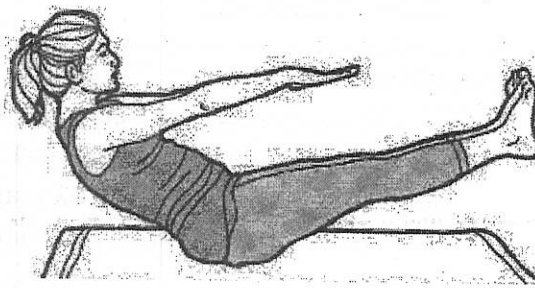


(d) .....

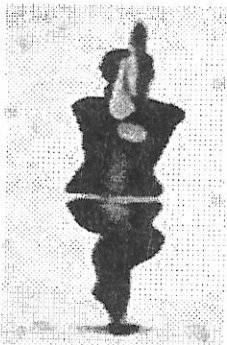
Q.14 Identify the asanas shown in the image and write their names:



(a) .....



(b) .....



(c) .....



(d) .....

Q.15 Differentiate between physical disabilities and intellectual disabilities.

Q.16 Explain any two stages of growth and development.

OR

Differentiate between growth and development.

Q.17 Explain in brief any three principles of sports training.

Q.18 What is the role of school counsellor in the development of Special need children?

Q.19 What is Pranayama? Write its benefits also. (Any three)

OR

Write down any three benefits of Sukhasana.

Q.20 What safety equipment is required for river rafting?

Q.21 What is the role of Psychology in physical education and sports?

OR

Explain the sub-stages of adolescence.

Q.22 What do you understand by the term specific warmup?

Q.23 Define growth and development.

Q.24 Write a short note on the history of Paralympic games.

Q.25 Explain the procedure of Tadasana.

Q.26 Draw a flow chart of categories of disabilities.

OR

Explain the need of Inclusive Education.

Q.27 Write about the elements of yoga in detail.

OR

Explain the procedure, benefits and contraindications of shashankasana.

Q.28 Explain in detail about essential qualities of a leader.

Q.29 Explain the problems of adolescents and how these can be managed?

Q.30 What are prohibited substances? Write their side effects.

OR

What are the sign and symptoms of substance abuse and how can you deal with it?