Delhi Public School, Bhilai

Annual Examination 2021

(15 March 2021)

Class: 11
Maximum Marks: 80

Subject: English (Core)
Duration: 3 Hours

General Instructions

- *The paper consists of eight printed pages.*
- *There are two parts: A and B. Both the parts are compulsory.*
- *Part A consists of only multiple-choice questions.*
- *Write only the closest / best answer to a multiple-choice question.*
- *Specific instructions, wherever necessary, are given. Follow them strictly.*
- *Read the division of the marks as "number of question(s)×mark(s)=total."*

PART A (40 MARKS)

READING (18 MARKS)

I. Read the following passage and answer the questions that follow it:

1. Piaget believed that all people pass through four stages in exactly the same order. The stages are generally associated with specific ages, but these are only general guidelines, not labels for all children of a certain age.
2. The earliest period is called the sensorimotor stage because the child's thinking involves seeing, hearing, moving, touching, tasting, and so on. During this period, infants develop object permanence, the understanding that objects exist in the environment whether they perceive them or not. This is the beginning of the important ability to construct a mental representation. As most parents discover, before infants develop object permanence, it is relatively easy to take something away from them. The trick is to distract them and remove the object while they are not looking—"out of sight, out of mind." The older infant who searches for the ball that has rolled out of sight is indicating an understanding that objects still exist even when they are not in view. . . .
3. The child is soon able to reverse this action by refilling the container. Learning to reverse actions is a basic accomplishment of the sensorimotor stage. As we will soon see, however, learning to reverse thinking—that is, learning to imagine the reverse of a sequence of actions—takes much longer.
4. The sensorimotor stage is followed by the preoperational one. By the end of the former, the child can use many action schemes. However, as long as these schemes remain tied to physical actions, they are of no use in recalling the past, keeping track of information, or planning. For this, children need what Piaget calls operations or the actions that are carried out and reversed *mentally* rather than physically. At the preoperational stage, the child starts moving towards mastery, but has not yet mastered these mental operations (so thinking is *pre*operational).
5. The next stage is that of concrete operations or of "hands-on" thinking. The basic characteristics of the stage are the recognition of the logical stability of the physical world; the realization that although elements can be changed or transformed, they conserve many of their original characteristics; and the understanding that these changes can be reversed.
6. The final stage is that of formal operations. At this stage, the focus of thinking shifts from *what is* to *what might be*; in other words, situations do not have to be experienced to be imagined.

[PTO]

On the basis of your understanding of the above passage, answer ANY TEN of the following questions: **10×1 = 10**

a. The stages mentioned by Piaget are generally associated with

(1) any ages. (2) no specific ages. (3). no ages. (4) specific ages.

b. People pass through the stages in

(1) almost the same order. (2) no order. (3) exactly the same order. (4) any order.

c. Object permanence is associated with the

(1) final stage. (2) first stage. (3) third stage. (4) second stage.

d. The beginning of the important ability to construct a mental representation is found in

(1) object permanence. (2) abject permanence. (3) project making. (4) drawing.

e. Action reversal is associated with the

(1) second stage. (2) final stage. (3) third stage. (4) first stage.

f. By the end of the sensorimotor stage, the child is able to use

(1) operations. (2) many acting schemes. (3) many action schemes. (4) no schemes.

g. Moving towards mastery is associated with the stage called

(1) sensorimotor. (2) operational. (3) preoperational. (4) none of these.

h. The stage of concrete operations is that of

(1) "hands-one" thinking. (2) "hats-off" thinking. (3) hats-on thinking. (4) "hands-on" thinking.

i. The child can imagine inexperienced situations when he or she enters the

(1) final stage. (2) third stage. (3) second stage. (4) first stage.

j. In paragraph 2, *perceive* is similar to

(1) hasten. (2) compel. (3) see. (4) sieve.

k. The opposite of *concrete* (paragraph 5) is

(1) concept. (2) abstract. (3) certain. (4) discrete.

II. Read the following passage and answer the questions that follow it:

1. The island nation of Papua New Guinea is approximately the size of California and contains some of the largest and most important remaining blocks of tropical forest wilderness. It also claims some of the least disturbed coral reef systems left on earth.
2. Papua New Guinea has an extremely diverse culture—an estimated 875 distinct languages are still spoken there. The combination of its rich biodiversity and cultural heritage makes Papua New Guinea a high conservation priority.
3. The Lakekamu Basin is one of the largest remaining pristine lowland rainforests in Papua New Guinea, covering an area approximately 975 square miles in the Gulf Province. Virtually uninhabited, the basin has until now been spared from human destruction, offering excellent opportunities for conservation. In October and November of 1996, Conservation International sent an expedition to this area of Papua New Guinea, under its Rapid Assessment Programme (RAP). Over a four-week period, the RAP team, comprising world-renowned experts and host country scientists, surveyed the Lakekamu Basin to create a first-cut assessment of the biological resources in this poorly known area. A research station was also established in the region, which serves as a base for further research and field training of the in-country scientists.

4. The expedition discovered nearly 44 new species of frogs, fish, ants, bees, wasps, reptiles, and dragonflies. The species new to science included 22 of ants, bees and wasps; 11 of frogs; 7 of reptiles; 3 of fish; and 1—3 of dragonflies and damselflies. More importantly, over 250 species of ants were found in a one square-kilometre area, making the basin a record-setting site for the greatest animal diversity outside South America. The expedition's data, together with previous work in the basin, will provide essential data for guiding Papua New Guinea's development.

5. The working paper of the expedition makes recommendations for conservation measures in the basin that incorporate the economic interests of the local landowners.

On the basis of your understanding of the above passage, answer ANY EIGHT of the following questions. **8×1 = 8**

a. Which of the following does the author use to describe Papua New Guinea:

(1) an island nation (2) a coral reef system (3) tropical forests (4) all of these?

b. The diverse culture of the nation is described in terms of its

(1) wasps. (2) languages. (3) bees. (4) measures.

c. The place is made a high conservation priority on account of

(1) rich biodiversity. (2) rich cultural heritage. (3) both (1) and (2). (4) none of these.

d. The author talks of the expedition sent to the Lakekamu Basin by

(1) Reef International. (2) Coral International. (3) Conservation International. (4) all of these.

e. Which of the following is not true of the Lakekamu Basin:

(1) 975 square km. (2) in the Gulf Province. (3) virtually unhabited. (4) a rainforest.

f. The RAP team surveyed the Lakekamu Basin for over a period of

(1) four months. (2) two years. (3) three years. (4) four weeks.

g. The list of nearly forty-four new species did not include

(1) frogs. (2) reptiles. (3) droneflies. (4) ants.

h. The number of species of fish new to science is

(1) forty-four. (2) twenty-two. (3) four. (4) three.

i. The Lakekamu Basin is, according to the author, the greatest animal diversity site outside

(1) South Africa. (2) South America. (3) North America. (4) Papua New Guinea.

GRAMMAR (8 MARKS)

III. Choose the appropriate option to fill in each of the blanks. Attempt ANY FOUR. 4×1=4

a. It is high time you _____ your child properly.

(1) raised (2) raise (3) are raising (4) have raised

b. I _____ two brothers, who take care of me in my parents' absence.

(1) am having (2) have (3) was having (4) had

c. He will go there only when his school _____ him to.

(1) will permit (2) permitted (3) permits (4) had permitted

d. I wish I_____ like a bird.

(1) flew (2) fly (3) flow (4) may fly

e. He hit me on _____ head

(1) my (2) mine (3) own (4) the

IV. Put in the right order the sentences of each group to make a sensible paragraph. Attempt ANY FOUR. 4×1=4

a. i. One day, he opened his box of gold coins.
ii. He wanted to have more and more of them.
iii. King Midas had an amazing collection of gold.
iv. He started counting the coins.
v. He said, therefore, "Would that anything I touched turned into gold!"

(1) v, i, ii, iii, iv (2) iv, v, ii, i, iii (3) iii, i, iv, ii, v (4) ii, iv, i, iii, v

b. i. The king had a little daughter.
ii. The touch turned her into gold, completely lifeless.
iii. He touched her.
iv. The king wept big tears of regret when he saw his golden, but lifeless daughter.
v. She came running to her.

(1) ii, i, v, iii, iv (2) i, v, iii, ii, iv (3) iii, i, iv, ii, v (4) v, ii, iv, i, iii

c. i. The Jade Emperor, however, did not do his duty.
ii. They were imprisoned under huge mountains.
iii. The people on earth were dying because the land was dry.
iv. The dragons, thereupon, scooped some water from his sea and sprayed it as rain.
v. Four kind dragons went to the Jade Emperor and requested him to send rain.

(1) ii, i, v, iii, iv (2) iv, v, ii, i, iii (3) iii, v, i, iv, ii (4) v, iii, iv, i, ii

d. i. The eldest son was to be the next king.
ii. He died, leaving three sons.
iii. He killed his elder brothers and fulfilled his wish.
iv. Long ago, there was a king in India.
v. The youngest son, however, had that wish.

(1) ii, i, v, iii, iv (2) v, iv, ii, i, iii (3) iii, iv, i, v, ii (4) iv, ii, i, v, iii

e. i. Salman Rushdie was born in India.
ii. His novel *Midnight's Children* brought laurels for him.
iii. He started his advertising career as a copywriter.
iv. He moved to England and studied at Rugby School and Cambridge University.
v. He, then, switched over to literature.

(1) ii, iii, v, i, iv (2) i, iv, iii, v, ii (3) iii, iv, i, v, ii (4) iv, ii, i, v, iii

LITERATURE (14 MARKS)

V. Choose only ONE of the following extracts and answer the questions based on it: 3×1=3

Extract 1

And who art thou? said I to the soft-falling shower,
Which, strange to tell, gave me an answer, as here translated:

a. The title of the poem is

(1) "The Rain." (2) "The Choice of the Rain." (3) "The Voice of the Rain." (4) "Childhood."

b. The poet is

(1) Walt Whiteman. (2) Walt Whitmen. (3) Walt Witman. (4) Walt Whitman.

c. The figure of speech we get from "said" and "soft" in the first line is

(1) oxymoron. (2) alliteration. (3) hyperbole. (4) simile.

Extract 2

> And the sea, which appears to have changed less,
> Washed their terribly transient feet.

a. The thematic contrast in the lines is between

(1) man and woman. (2) nature and the sea. (3) nature and human life. (4) mother and daughter.

b. The literary device used in "transient feet" is

(1) transferred epilogue. (2) oxymoron. (3) alliteration. (4) transferred epithet.

c. The poet is

(1) Shirley Tulson. (2) Shirley Toulsen (3) Shirley Toulson. (4) Shirley Temple.

VI. Choose any TWO of the following extracts and answer the questions based on them: 6×1=6

Extract 1

> Ancient Hindu and Buddhist cosmology pinpoints Manasarovar as the source of four great Indian rivers: the Indus, the Ganges, the Sutlej and the Brahmaputra.

a. Manasarovar is

(1) an ocean. (a) a mountain. (3) a lake. (4) a big river.

b. Only one of the rivers originates from Manasarovar:

(1) the Indus (2) the Ganges (3) the Sutlej (4) the Brahmaputra

c. The author is

(1) Nick Bryant. (2) Nick Chatterton. (3) Nick Milton. (4) Nick Middleton.

Extract 2

> ... the earth's principal biological systems are four — fisheries, forests, grasslands, and croplands — and they form the foundation of the global economic system.

a. The book on which the above discussion is based is

(1) *The Earth's Biological Systems.* (2) *The Global Economic Prospect.*
(3) *The Global Economic System.* (4) *The Global Ecological Prospect.*

b. The author of the book is

(1) L.K. Jha. (2) M.N. Jha. (3) Lester R. Crown. (4) Lester R. Brown.

c. These biological systems do not provide

(1) food. (2) minerals. (3) virtually all raw materials. (4) firewood.

Extract 3

> Just as the mango is special, so is everything else around our village. We have a creeper growing in the ever-so-fine water of the village pond.

a. The speaker is

(1) Ranga. (2) Ratna. (3) Shastri. (4) Shyama.

b. The village talked about is

(1) Hoshalli. (2) Hosahalli. (3) Hoshiyari. (4) Hiraluru.

c. The author is

(1) Mayo Minco. (2) Venkatesh Vatsa. (3) Masti Venkatesha Iyengar. (4) Rama Rao.

VII. Answer ANY FIVE of the following questions: **5×1=5**

a. In "Childhood," we do not find

(1) individuality. (2) rationalism. (3) hypocrisy. (4) surrealism.

b. In "The Laburnum Top," there is an image of

(1) a machine. (2) a jail. (3) writing. (4) cooking.

c. The author of "Discovering Tut: The Saga Continues" is

(1) R. A. Williams. (2) A. R. Williams. (3) S. R. Williams. (4) R. S. Williams.

d. The name of Mourad's father is

(1) John Byro. (2) Khosrove. (3) Arak. (4) Zorab.

e. Charlie Spence is related to

(1) Mrs. Pearson. (2) Doris Fitzgerald. (3) Doris Pearson. (4) Cyril.

f. Albert Einstein got his medical certificate from

(a) Elsa. (2) Dr Veil. (3) Dr Vain. (4) Dr Weil.

PART B (40 MARKS)

READING (8 MARKS)

VIII. Read the following passage and answer the questions that follow it:

The International Monetary Fund was founded at an international conference in Bretton Woods, New Hampshire in July 1944. It was created together with the World Bank as a means to promote monetary cooperation between countries and achieve a more stable global economy.

Since its creation, the fund's principal activities have included stabilizing currency exchange rates, financing the short-term balance-of-payments deficits of member countries, and providing advice and technical assistance for borrowing countries.

The fund is headed by a board of governors, each of whom represents one of the organization's approximately 180 member states. The governors, who are usually their countries' finance ministers or central bank directors, attend annual meetings on IMF issues. The fund's day-to-day operations are administered by an executive board, which consists of twenty-four executive directors, who meet at least three times a week. Eight directors represent individual countries (China, France, Germany, Japan, Russia, Saudi Arabia, the United Kingdom, and the United States), and the other 16 represent the fund's remaining members, grouped by world regions. Because it makes most decisions by consensus, the executive board rarely conducts formal voting. The board is chaired by a managing director, who is appointed by the board for a renewable five-year term and supervises the fund's staff of about 2,700 employees from more than 140 countries. The managing director is usually a European, and—by tradition—not an American. The first female managing director, Christine Lagarde of France, was appointed in June 2011.

Each member contributes a sum of money called a quota subscription. Quotas are reviewed every five years and are based on each country's wealth and economic performance—the richer the country, the larger its quota. The quotas form a pool of loanable funds and determine how much money each member can borrow and how much voting power it will have.

a. ***Make notes on the passage in an appropriate format; putting an appropriate title, numbering the notes, making indentations (wherever required), and using at least four abbreviations or symbols.*** 5

b. ***Write a summary of the passage in not more than fifty words.*** 3

WRITING (16 MARKS)

IX. Attempt ONLY ONE of the following questions: **1×3**

a. You are Sushil / Sushila Nair, principal of New Age School, Bhilai-490 023. Your school is going to host an interschool dance contest at senior secondary level. Write, therefore, a notice, in not more than fifty words, inviting participants from the senior secondary schools of the city.

b. You are Prabodh / Prabha Sahu, principal of Newton Public School, Ber Sarai, New Delhi-100 067. Your school is going to host an interschool one-act play contest at senior secondary level. Write, therefore, a notice, in not more than fifty words, inviting participants from the senior secondary schools of the city.

X. Attempt ONLY ONE of the following questions: **1×3=3**

a. You are Anuj /Anuja Dalal, a copywriter. You have been asked by the Ministry of Education, Government of India, to design a poster about International Literacy Day (8 September). Design the poster in about fifty words, highlighting the significance of literacy.

b. You are Sneh / Sneha Gupta, a copywriter. You have been asked by the Ministry of Women and Child Development, Government of India, to design a poster on the International Day of the Girl Child (11 October). Design the poster in not more than fifty words.

XI. Attempt ONLY ONE of the following questions: **1×5=5**

a. You are Sanchit/Sanchita Thapar and your address is B7 Vasant Vihar, Purulia Road, Ranchi-834 001. You want to buy some books from Cambridge University Press. Write, in this regard, a letter, in 120—150 words, to M/s Cambridge University Press, 2 Ansari Marg, New Delhi-110 025, giving the necessary details of the books.

b. You are Darpan / Disha Soni, a student of class 11 at Estella Public School, Bhilai-490 001. You want your school to start special classes for some important competitions. Write a letter, in 120—150 words, to the principal in this regard, telling him or her why and how he or she should implement your proposal.

XII. Attempt ONLY ONE of the following questions: 1×5=5

a. You are Ramesh / Rashmi Verma, a student of class 11, at Modern Public School, Hyderabad. You have been asked to deliver a speech on the significance of social media. Write, therefore, the speech in 120—150 words.

b. You are Puru / Purnima Narlikar, a student of class 11 at M.N. Roy Public School, Kolkata. You are going to represent your school in an interschool debate. The motion is "Studying three languages at school level really strengthens our country." Draft your debate-related speech for it (for or against the motion) in 120—150 words.

LITERATURE (16 MARKS)

XIII. Answer ANY TWO of the following questions, each in 30—40 words: 2×2=4

a. Why does the grandmother always accompany the child to school when they are in the village?

b. How does the poet present the water cycle in "The Voice of the Rain"?

c. What is Taplow's assessment of Mr Crocker-Harris?

d. Who were Larry Vigil and Herb Seigler? Why do you consider them important?

XIV. Answer ONLY ONE of the following questions in 30—40 words: 1×2=2

a. How are Albert Einstein's and Mr Braun's ideas different?

b. What are Ranga's views on marriage?

XV. Answer ONLY ONE of the following questions in 120—150 words: 1×5=5

a. ' "The Portrait of a Lady" shows that if a person does not adapt to the changes due to place and time, he or she faces emotional consequences.' Explain it.

b. "Gordon Cook is a wonderful captain." Discuss the statement.

XVI. Answer ONLY ONE of the following questions in 120—150 words: 1×5=5

a. How does Mrs Fitzgerald reform Mrs Pearson's family?

b. 'In "Ranga's Marriage," Shyama performs all his roles in such a way that the reader cannot help admiring him.' Comment on the statement.

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020–21
SUBJECT – MATHEMATICS

Class : XI | **Max. Marks : 80**
Date : 26.03.2021 | **Time : 3 Hrs.**

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 h**as 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.**
- **Internal choices are provided in 4 questions of Section – I, 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

Q.01 Let A is a finite set containing 10 elements then write the number of proper subsets of A.

Q.02 If A = {a,b,c,d}, then find the number of relations that can be defined on A.

Q.03 Find the domain of R where $R = \{x, y): y = x + \frac{6}{x},\ x, y \in N \text{ and } x < 6\}$.

OR

Find the domain for which the function $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal

Q.04 If $tan\ x = \frac{4}{3}$, x is in III quadrant, find the Value of $\cos x$.

OR

Find the value of $sin\left(\frac{-11\pi}{3}\right)$.

Q.05 If $f(x) = [x]$ is a greatest integer function then find the value of $[\pi] + [-\pi]$.

Q.06 Find the length of an arc of a circle of radius 5 cm. subtending a central angle measuring 15^0.

Q.07 Find the value of $\frac{(1-i)^3}{1-i^3}$

OR

Find the value of $2\sqrt{-9} \times \sqrt{-16}$

Q.08 If $Z = \frac{(1+i))(2+i)}{3+i}$ then find the value of |Z|.

Q.09 Write the solution set of inequations $2x - 1 \leq 3\ and\ 3x + 1 \geq -5$

Q.10 Solve the inequation $\frac{1-x}{1+x} \geq 4, for\ x$

Q.11 Find the 9^{th} term of the sequence 1, 1, 2, 3, 5 ...

Q.12 Find the sum of first n odd natural numbers.

Q.13 Find the slope of the line which cuts off equal intercepts on positive directions of axes.

OR

Find the co-ordinates on y-axis which are at a distance $5\sqrt{2}$ from the pont P (3, -2, 5).

Q.14 Find the value of $\lim_{x \to 1} \frac{x^m - 1}{x^n - 1}$

Q.15 If $f(x) = x\ sin\ x$ then find the value of $f'(\pi/_2)$.

Contd...2

Q.16 A coin is tossed, if head comes a die is thrown twice and if tail comes then coin is tossed again. Write the sample space.

Q.17 A man running a race course notes that the sum of the distances from the two flag pots from him is always 10 m and the distance between the two flag posts is 8 m. Considering the above situation answer the following questions-

(1) The equation of the running track is -

(a) $\frac{x^2}{25} - \frac{y^2}{9} = 1$ (b) $\frac{x^2}{25} + \frac{y^2}{9} = -1$

(c) $\frac{x^2}{25} + \frac{y^2}{9} = 1$ (d) $\frac{y^2}{9} - \frac{x^2}{25} = 1$

(2) The length of major axis of the track is -

(a) 6 (b) 9 (c) 5 (d) 10

(3) The length of minor axis of the track is –

(a) 10 (b) 9 (c) 5 (d) 6

(4) The area an ellipse is π ab where a and b are semi major and semi minor axis. Then the area of this elliplical ground is

(a) 15π (b) 5π (c) 3π (d) 8π

(5) The eccenfricity of the elliptical track is

(a) $^4/_5$ (b) $^3/_5$ (c) $^5/_4$ (d) $^1/_5$

Q.18

Following are the marks in maths out of 80, in two sections of class XI.

Class/Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students in XI A	9	17	32	23	40	18	1
No. of students in XI B	18	22	40	18	32	8	2

(i) The mean marks of Section A is

(a) 44 (b) 45 (c) 41 (d) 46

(ii) The mean marks of Section B is

(a) 37 (b) 39 (c) 41 (d) 44

(iii) The Section with better performance

(a) Section A (b) Section B (c) both section are same (d) Can't say.

(iv) No. of students in Section A who are scoring more than or equal to 50%

(a) 23 (b) 40 (c) 92 (d) 73

(v) No. of students in Section B who are scoring less than 25%

(a) 18 (b) 22 (c) 40 (d) 29

PART - B

SECTION – II

Q.19 In a group of 65 people, 40 like cricket, 10 like both cricket and tennis. How many like tennis? How many like tennis only.

Q.20 Prove that $cos\left(\frac{3\pi}{4} + x\right) - cos\left(\frac{3\pi}{4} - x\right) = -\sqrt{2}\, sin\, x$

OR

Prove that $cot\ 4x\ (\sin 5x + sin\ 3x) = cot\ x\ (sin\ 5x - sin\ 3x)$

Q.21 Find the value of $tan\ ^{\pi}/_{8}$.

Q.22 Find the real numbers $x\ and\ y\ if\ (x - iy)(3 + 5i)$ is the conjugate of $-6 - 24\ i$

Q.23 How many different numbers each of six digits can be formed by using the digits 1,2,1,2,0,2

Contd...3

Q.24 Aman has six friends. In how many ways can he invite one or more of them to a tea party?

OR

Find n, if ${}^{2n}C_3 : {}^{n}C_2 = 44:3$

Q.25 In an A.P. , if m^{th} term is n and n^{th} term is m where $m \neq n$, *then find its* P^{th} *term.*

Q.26 The sum of first three terms in a G.P. is 16 and the sum of next three terms is 128. Determine the first tem and the common ratio.

Q.27 Evaluate $\lim\limits_{x \to -3} \frac{x^3+27}{\sqrt{x^2+7}-4}$

OR

Evaluate $\lim\limits_{x \to \pi/2} \frac{tan2x}{x-\pi/2}$

Q.28 Find $\frac{dy}{dx}$ *if* $y = (4x^3 - 5x^2 + 1)^3$

SECTION – III

Q.29 Let $f = \left\{\left(x, \frac{x^2}{1+x^2}\right), x \in R\right\}$ be a function from R to R. Determine the range of 'f'

Q.30 Prove that $(cos\ x - cos\ y)^2 + (sin\ x - sin\ y)^2 = 4\ sin^2\left(\frac{x-y}{2}\right)$

OR

Find $sin\ \frac{x}{2}$, $cos\ \frac{x}{2}$ and $tan\ \frac{x}{2}$ if $cos\ x = \frac{-1}{3}$ and $\pi \leq x \leq 3\pi/2$

Q.31 If $\alpha\ and\ \beta$ are different complex numbers with $|\beta| = 1, then\ find\ \left|\frac{\beta-\alpha}{1-\bar{\alpha}\beta}\right|$

OR

If $a + ib = \frac{(x+i)^2}{2x^2+1}$, then prove that $a^2 + b^2 = \frac{(x^2+1)^2}{(2x^2+1)^2}$

Q.32 In how many different ways can the letters of the word 'MATHEMATICS' be arranged so that consonants occur together?

Q.33 The sum of two number is 6 times their geometric means, show that the numbers are in the ratio $(3 + 2\sqrt{2}) : (3 - 2\sqrt{2})$

Q.34 Differentiate $sin\ (3x + 2)$ by first Principle.

Q.35 If a four digit number 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 5 when.

(i) The digits are repeated (ii) The repetition of digits are not allowed.

SECTION – IV

Q.36 Prove that $\frac{Sec\ 8A-1}{Sec\ 4\ A-1} = \frac{tan\ 8A}{tan\ 2\ A}$

OR

Prove that Sin 20^0 Sin 40^0 Sin 60^0 Sin 80^0 = 3/16

Q.37 Find the solution region represented by the inequations

$2x + y \geq 8, \quad x + 2y \geq 8, \quad x + y \leq 6.$

OR

A solution of 9% acid to be diluted by adding 3% acid solution to it. The resulting mixture is to be more 5% but less than 7%. If there is 460 litres of 9% solution, how many litres of 3% solution will have to be added?

Q.38 A ray of light passing through the point (1,2) reflects on x-axis at a point A and the reflected ray passed through the point (5,3). Find the co-ordinates of A.

OR

Find the image of the point (3,8) with respect to the line $x + 3y = 7$ assuming line to be a plane mirror.

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020–21
SUBJECT – PHYSICS

Class : XI **Max. Marks : 70**
Date : 19.03.2021 **Time : 3 Hrs.**

General Instructions :

(1) All questions are compulsory. There are 33 questions in all.

(2) This question paper has five sections :
Section A, Section B, Section C, Section D and Section E.

(3) **Section A** contains ten very short answer questions and four assertion reasoning MCQs of 1 mark each,
Section B has two case based questions of 4 marks each,
Section C contains nine short answer questions of 2 marks each,
Section D contains five short answer questions of 3 marks each and
Section E contains three long answer questions of 5 marks each.

(4) There is no overall choice. However internal choice is provided. You have to attempt only one of the choices in such questions.

SECTION - A

All questions are compulsory. In case of internal choices, attempt any one of them.

1. Write the dimension of coefficient of thermal conductivity. **(1)**

2. The percentage errors in the measurement of mass and speed are 2% and 1% respectively. Find the percentage error in kinetic energy
OR **(1)**
If the errors involved in the measurements of a side and mass of a cube are 3% and 2% respectively, what is the percentage error in the density of the material ?

3. A player throws a ball upwards with an initial velocity u, what is the direction of acceleration during the upward motion of the ball ? **(1)**

4. Write the expression for maximum velocity of a car with which it can safely negotiate the circular turn on a level road. **(1)**

5. Write the degrees of freedom of a monoatomic gas free to vibrate. **(1)**

6. State Stefan's law.
OR **(1)**
State Wien's displacement law.

7. A 8 kg block moving on a frictionless horizontal surface with a velocity of 2 m/s, compresses an ideal spring and comes to rest. If the force constant of the spring be 200 N/m, then how much the spring is compressed? **(1)**

8. Draw graph showing the variation of acceleration due to gravity with distance from the centre of the earth. **(1)**

9. Two equal forces have their resultant equal to each other. At what angle are they inclined?
OR **(1)**
Two forces whose magnitude are in the ratio 3:5 give a resultant of 28N.If the angle of their inclination is 60^0, find the magnitude of each force.

Contd...2

10. What are the two basic properties of a medium for propagation of waves?

OR (1)

Why does sound travel faster in water than in air?

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

11. Assertion : A body is moving along a circle with a constant speed. Its angular momentum about the centre of the circle remains constant. (1)

Reason : In this situation, a constant non zero torque acts on the body.

12. Assertion : The apparent weight of a body in an elevator with some downward acceleration is less than the actual weight of body. (1)

Reason : The part of the weight is spent in producing downward acceleration, when body is in elevator.

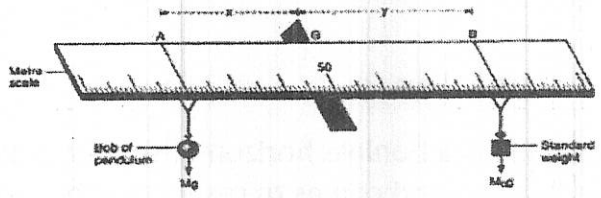
13. Assertion : In circular motion acceleration of the particle is not always towards centre. (1)
Reason : If the speed of the particle is not constant acceleration is not towards centre.

14. Assertion : In adiabatic expansion product of PV always decreases. (1)
Reason : In adiabatic expansion work done by the gas is positive.

SECTION – B

Questions 15 and 16 are Case Study based questions and are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark.

15. The meter scale is balanced by putting its 50 cm mark over the sharp edge of a heavy broad wedge which works as fulcrum. In this position the weight of the metre scale and reaction of the wedge, balance each other. A body (bob of pendulum) is tied to a strong and light thread loop and suspended on the left of the wedge on fixed mark 20 cm. A standard weight from the weight box is suspended by a strong and light thread on the right of the wedge on fixed mark 83 cm. The position of the loop of the bob and standard weight in it are so adjusted that the metre scale becomes horizontal again, the system will be in rotational equilibrium. According to the principle of moments, the scale will be horizontal or in rotational equilibrium if anticlockwise moments = clockwise moments (4)



(i) If the metre scale becomes horizontal, then

(a) $\sum F = 0$ and $\sum \tau = 0$ (b) $\sum F \neq 0$ but $\sum \tau = 0$

(c) $\sum F = 0$ and $\sum \tau \neq 0$ (d) $\sum F \neq 0$ and $\sum \tau \neq 0$

(ii) Anticlockwise and clockwise moments are respectively

(a) +ve and –ve (b) –ve and +ve (c) +ve and +ve (d) -ve and -ve

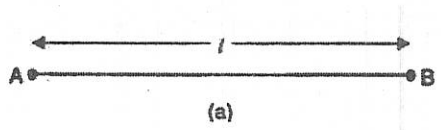
Contd...3

(iii) In the above diagram, if the standard weight of 20 N is hanged at 83 cm mark then find the weight of the body (bob of the pendulum) at 20 cm mark.
(a) 20 N (b) 22 N (c) 10 N (d) None

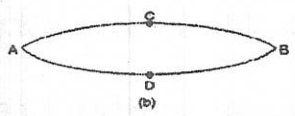
(iv) When torque applied on a system is zero which of the following will be constant
(a) force (b) linear momentum (c) angular momentum (d) angular velocity

(v) A body weight 8 g when placed in one pan and 18 g when placed on the other pan of a false balance. If the beam is horizontal when both the pans are empty, the true weight of the body is
(a) 13 g (b) 12 g (c) 15.5 g (d) 15 g

16. Let a string of length l and mass per unit length m be fixed at its ends A and B and stretched by a tension T fig. (a) Let it be plucked at C in the middle, fig. (b) When the string is left free, it moves downward and disturbances move towards ends A and B. These disturbances are reflected from the fixed ends A and B and get travel back in the string. Along the string, incident and reflected disturbances (waves) superposed. Their superposition produces stationary waves in the string. The stationary waves are transverse because the string moves from C to D back from D to C, whereas waves travel along the string from A to B and B to A. The least frequency is called fundamental frequency (v) and is given by $v = \frac{1}{21}\sqrt{\frac{T}{m}}$ (4)



(a)



(b)

(i) A sitar wire is replaced by another wire of same length and material but of triple radius. If the tension in the wire remains the same , the frequency will become
(a) One-third (b) Three times (c) One-ninth (d) Nine times

(ii) Velocity of these transverse wave depends on tension T as
(a) T (b) 1/T (c) $\sqrt{T}$ (d) $1\sqrt{T}$

(iii) In case of stationary sound waves in air
(a) Each air particle vibrates with the same amplitude.
(b) Amplitude is maximum for some particles and minimum for some others.
(c) The particles do not execute periodic motion
(d) The particles do not vibrates at all.

(iv) Two waves of the same frequency travelling in the same medium but in opposite direction if superposed give rise to
(a) Resonance (b) progressive waves (c) Beats (d) Stationary waves

(v) For the given diagram, the frequency obtained is

(a) v (b) $2v$ (c) $3v$ (d) $4v$

Contd...4

SECTION - C

All questions are compulsory. In case of internal choices, attempt anyone.

17. Using the method of dimension derive an expression for rate of flow of a liquid depends upon radius of the pipe, pressure gradient and coefficient of viscosity. **(2)**

OR

Young's modulus of steel is 2×10^{10} N/m^2. Express in C.G.S. unit dimensionally. **(2)**

18. A particle is executing SHM of amplitude A. At what displacement from the mean position, is the energy half kinetic and half potential? **(2)**

19. State zeroth law of thermodynamics. Hence define temperature. **(2)**

20. State law of equipartition of energy and using this find the relation for the total internal energy of a mole of diatomic gases. **(2)**

21. A ball is thrown vertically upwards with a velocity of 30 m s^{-1} from the top of a multi storey building. The height of the point from where the ball is thrown is 35.0m from the ground. (a) How high will the ball rise ? and (b) how long will it be before the ball hits the ground ? Take g = 10 ms^{-2} . **(2)**

OR

A car moving along a straight highway with speed of 126 Km/h is brought to a stop within a distance of 200m. What is the retardation of the car (assumed uniform), and how long does it take for the car to stop?

22. Define coefficient of viscosity. Write the effect of temperature on the viscosity of gases. **(2)**

23. Find a unit vector which is perpendicular to both
$\vec{A} = 4\hat{\imath} - \hat{\jmath} + 3\hat{k}$ and $\vec{B} = -2\hat{\imath} + \hat{\jmath} - 2\hat{k}$ **(2)**

24. Derive an expression for the work done during the adiabatic expansion of an ideal gas. **(2)**

25. The radii of circular orbits of two satellites A and B of the earth, are 4R and R respectively. If the speed of satellite A is 3V, then find the speed of satellite B. **(2)**

OR

Find the height from the surface of the earth at which weight of a body will be reduced by 36% of its weight on the surface of earth.

SECTION – D

All questions are compulsory. In case of internal choices, attempt anyone

26. Draw stress-strain graph for a loaded steel wire and hence explain the term permanent set and yield point. **(3)**

27. Derive the expression of excess pressure inside a soap bubble. **(3)**

OR

State Pascal's law. Explain hydraulic lift.

28. Show that motion executed by the bob of the simple pendulum is S. H. M. Derive an expression for its time period. **(3)**

29. State and prove Bernoulli's theorem. **(3)**

OR

Define terminal velocity, derive its expression.

Contd...5

30. Three uniform spheres, each having mass m and radius r, are kept in such a way that each touches the other two. Find the magnitude of the gravitational force on any sphere due to other two. **(3)**

SECTION – E

All questions are compulsory. In case of internal choices, attempt anyone

31. (a) Define elastic collision. Show that in case of one dimensional elastic collision of two bodies, the relative velocity of separation after collision is equal to the relative velocity of approach before the collision.

(b) What percentage of K.E. of a moving particle is transfer to a stationary particle when it strike the stationary particle of 4 times its mass?

OR **(3+2)**

(a) State and prove work energy theorem.

(b) A body of mass 0.5 kg travels in a straight line with velocity $v = ax^{3/2}$, where $a = 5m^{-1/2}s^{-1}$. What is the work done by the net force during its displacement from x=0 to x=2 m?

32. (a) Define centripetal acceleration. Derive an expression for centripetal acceleration.

(b) A stone tied to the end of a string 80cm long is whirled in a horizontal circle with a constant speed. If the stone makes 14 revolutions in 25 s. What is the magnitude of the acceleration of the stone?

OR **(3+2)**

(a) A projectile is fired with a velocity 'u' making an angle 'θ' with the horizontal. Show that its trajectory is a parabola. Write expressions for

(i) Horizontal range (ii) Maximum Height.

(b) A fighter plane flying horizontally at an altitude of 1.5 km with speed of 720 km/h passes directly overhead an antiaircraft gun. At what angle from the vertical should the gun be fired for the shell of muzzle speed 400 m/s to hit the plane?

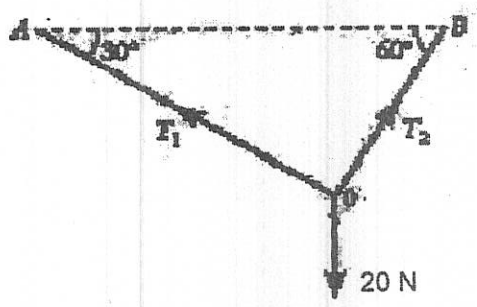
33. (a) Obtain an expression for the maximum speed with which a vehicle can safely negotiate a curved road of radius r banked at an angle θ, having coefficient of friction μ.

(b) A train has to negotiate a curve of 400 m. By how much should the outer rail be raised with respect to the inner rail for a speed of 48 km/h? The distance between the rails is 1 m.

OR **(3+2)**

(a) Define angle of repose and coefficient of friction. Derive the relation between them

(b) Determine the tension T_1 and T_2 in the following system.



DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020–21
SUBJECT – CHEMISTRY

Class : XI **Max. Marks : 70**
Date : 22.03.2021 **Time : 3 Hrs.**

General Instruction :

- This question paper comprises Four Sections – A, B, C and D. There are 33 questions in the question paper. All the questions are compulsory.
- **Section A** – Qn. No. 1 and 2 are case-based questions, having 4 MCQs and 4 Assertion – Reason type questions based on given passage. Each question carry 1 mark. Qn. No. 3 to 16 are MCQs and Assertion – Reason type carrying 1 mark each.
- **Section B** – Question nos. 17 to 25 are Short answer type carrying 2 marks each.
- **Section C** – Question no. 26 to 30 are Short answer type carrying 3 marks each.
- **Section D** – Question nos. 31 to 33 are Long answer type carrying 5 marks each.
- Internal choice is there in all sections.
- Use of calculator is not permitted.

SECTION – A

1. Molecular orbitals are formed by the overlap of atomic orbitals. Two atomic orbitals combine to form two Molecular orbitals called Bonding Molecular orbitals (BMO) and Anti bonding Molecular Orbitals (ABM). Different atomic orbitals of one atom combine with those atomic orbitals of second atom which have comparable energies and proper orientation. Depending on head-on and parallel overlapping, the molecular orbitals are called σ and π molecular orbitals. The molecular orbitals are filled with electrons following same rules followed for filling atomic orbitals. Bond order is one of the most important parameters to compare a number of their characteristics.

(i) The correct statement with regard to H_2^+ *and* H_2^- is **(1)**

(a) both H_2^+ *and* H_2^- do not exist. (b) H_2^- is more stable than H_2^+

(c) H_2^+ is more stable than H_2^- (d) both H_2^+ *and* H_2^- are equally stable.

(ii) Which of the following have same bond order? **(1)**

(a) O_2, N_2 (b) O_2^-, N_2^+

(c) O_2^+, N_2^- (d) O_2^-, N_2^-

(iii) Which one of the following options represents the correct order for Bond Order? **(1)**

(a) $O_2^+ > O_2^- > O_2$ (b) $O_2 < O_2^- < O_2^+$

(c) $O_2^- > O_2 > O_2^+$ (d) $O_2^- > O_2 < O_2^+$

(iv) Diamagnetic species are those which contain no unpaired electrons. Which of the following is diamagnetic? **(1)**

(a) N_2^- (b) N_2^{2-} (c) O_2^{2-} (d) O_2

OR

Which one of the following statement is correct?

(a) BMO is lowered by same amount of energy by which ABMO is raised.

(b) BMO is lowered by greater amount of energy than the amount by which ABMO is raised.

(c) BMO is lowered by lesser amount of energy than the amount by which ABMO is raised.

(d) None of the above.

2. The concept of oxidation number is very important in understanding redox reaction? It helps to identify the oxidant and reductant in redox reaction. It also helps to find out the possible molecular formula for any neutral compound and to balance redox reaction. In the following questions, a statement of Assertion followed by a statement of Reason is given. Choose the correct answer out of the following choices:

(a) Assertion and Reason both are correct statements and reason is correct explanation for assertion.

(b) Assertion and Reason both are correct statements but reason is not correct explanation for assertion.

(c) Assertion is correct statement but Reason is wrong statement.

(d) Assertion is wrong statement but Reason is correct statement.

Contd...2

(i) Assertion (A) : All decomposition reactions are redox reactions. **(1)**
Reason (R) : H_2O on decomposition gives H_2 and O_2.

(ii) Assertion (A) : HNO_2 acts as both an oxidant as well as a reductant. **(1)**
Reason (R) : The oxidation number of N can increase above +3 and can also decrease below +3.

OR

Assertion (A) : The decomposition of H_2O_2 to form water and O_2 is an example of a disproportionation reaction.
Reason (R) : The oxygen of Peroxide is in -1 oxidation state and it is converted to zero oxidation state in O_2 and -2 oxidation state in H_2O.

(iii) Assertion (A) : A substance which gets reduced can act as an oxidant. **(1)**
Reason (R) : In the reaction, $3\ ClO^- \rightarrow ClO_3^- + 2Cl^-$, Cl atom is oxidsed as well as reduced.

(iv) Assertion (A) : In the reaction of $KMnO_4$ and KI, in acidic medium, $KMnO_4$ act as oxidizing agent. **(1)**
Reason (R) : Oxidation state of Mn changes from +2 to +7 during the reaction.

Question nos. 3 to 11 are Multiple Choice Questions. **(1x9)**

3. With respect to atomic spectrum, each line in the lyman series is due to electron returning.
(a) from a particular higher energy level to n=3 (b) from a particular higher energy level to n=2
(c) from a particular higher energy level to n=1 (d) from a particular higher energy level to n=4

OR

Which of the following set of quantum numbers is not possible?
(a) n=3, l=o, m=0 (b) n=3, l=1, m=-1 (c) n=2, l=0, m=-1 (d) n=2, l=1, m=0

4. Which of the following compounds contain all carbon in same hybridization state?
(a) $CH_3 - CH = CH_2$ (b) $H - C \equiv C - C \equiv C - H$
(c) $CH_3 - C \equiv C - CH_3$ (d) $CH_2 = CH - CH_3$

5. Find the oxidation state of I in $H_4IO_6^-$
(a) $+5$ (b) $+1$ (c) -1 (d) $+7$

OR

Which of the following is not an example of redox reaction?
(a) $CuO + H_2 \rightarrow Cu + H_2O$ (b) $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$
(c) $2K + F_2 \rightarrow 2KF$ (d) $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + 2HCl$

6. Find the incorrect statement regarding a Nucleophile
(a) A nucleophile is a Lewis acid (b) Nucleophiles do not seek electrons
(c) Ammonia is a nucleophile (d) Nucleophiles attack low electron density sites

7. Thermodynamics is not concerned about
(a) energy changes involved in a chemical reaction (b) the rate of which a reaction proceeds
(c) the extent to which a chemical reaction proceeds (d) the feasibility of a chemical reaction.

OR

Which one of the following is not correct?
(a) ΔG is negative for spontaneous reaction (b) ΔG is positive for spontaneous reaction
(b) ΔG is positive for non-spontaneous reaction (d) ΔG is zero for spontaneous reaction

8. For the reaction, $2\ Cl_{(g)} \rightarrow Cl_{2(g)}$, *the signs of* ΔH *and* ΔS *respectively are*
(a) $+, -$ (b) $+, +$ (c) $-, -$ (d) $-, +$

9. Which of the following alkali metals is having least melting point?
(a) Na (b) K (c) Rb (d) Cs

10. Heating a mixture of sodium benzoate and soda lime gives
(a) Calcium benzoate (b) Benzene (c) Sodium benzoate (d) Methane

OR

Calcium carbide on reaction with water gives
(a) methane (b) acetylene (c) ethane (d) propane

11. Which of the following statement is false regarding alkali metals?
(a) Alkali metals are soft and can be cuts with the help of knife.
(b) They do not occur in free state in nature.
(c) They are highly electropositive.
(d) Their metal hydrides are covalent in nature.

Contd...3

In the question nos. 12 to 16, a statement of Assertion followed by a statement of Reason is given. Choose the correct answer out of the following choices: **(1x5)**

(a) Assertion and reason both are correct statements and reason is correct explanation for assertion.

(b) Assertion and Reason both are correct statements but reason is not correct explanation for assertion.

(c) Assertion is correct statement but Reason is wrong statement.

(d) Assertion is wrong statement but Reason is correct statement.

12. Assertion (A) : 3° carbocations are generally formed more easily than 1° carbocation.
Reason (R) : Hyper conjugation as well as Inductive effect due to additional alkyl group stabilize 3° carbocation.

13. Assertion (A) : The atomic radius of Ga is more than that of Al.
Reason (R) : The presence of additional 10 d electrons in Ga offers poor shielding effect.

14. Assertion (A) : Li resembles Mg in its properties.
Reason (R) : The size of Li and Mg is almost same.

15. Assertion (A) : Combustion of all organic compounds is an exothermic reaction.
Reaction (R) : The enthalpies of all elements in their standard state are zero.

16. Assertion (A) : Boiling points of cis-isomers are higher than those of trans-isomers.
Reason (R) : Dipole moment of cis-isomers are higher than those of trans-isomers.

SECTION – B

17. **(a)** Write the respective conjugate acid and conjugate base for NH_3. **(2)**

(b) In what direction will the following equilibrium shift by increasing the pressure?

(i) $COCl_{2(g)} \rightleftharpoons CO_{(g)} + Cl_{2(g)}$ (ii) $2H_{2(g)} + Co_{(g)} \rightleftharpoons CH_3OH_{(g)}$

18. Beryllium and Magnesium do not impart colour to the flame whereas other alkaline earth metals do so. Why? **(2)**

19. Define molarity. Calculate molarity of NaOH in the solution prepared by dissolving its 4g in enough water to make 250 mL of the solution. (at mass of Na = 23, O = 16, and H = 1). **(2)**

20. Which of the following carbocation is most stable and why? **(2)**

$CH_3\,CH_2\,CH_2^{\oplus}$, $(CH)_3C^{\oplus}$, $CH_3CH^{\oplus}\,CH_2\,CH_3$

21. What is the wavelength of light emitted when the electron in a hydrogen atom undergoes transition from an energy level with n=4 to an energy level with n=2. **(2)**

OR

Yellow light emitted from a sodium lamp has a wave length (λ) of 580 nm. Calculate the frequency (v) and wavenumber (v) of the yellow light.

22. **(a)** Convert Benzene to Acetophenone. **(2)**

(b) Arrange Chlorobenzene, 2, 4 – dinitrochlorobenezene and p-nitro chlorobenzene in order of their decreasing reactivity with an electrophile.

23. On the basis of quantum number, justify that the sixth period of periodic table should have 32 elements. **(2)**

24. Although geometries of NH_3 and H_2O are distorted tetrahedral, bond angle of water is less than that of ammonia. Discuss. **(2)**

25. For the reaction, $2A_{(g)} + B_{(g)} \rightarrow 2D_{(g)}$, $\Delta U^\circ = -10.5\ KJ$ *and* $\Delta S^\circ = -44.1\ JK^{-1}$. Calculate ΔH° *for the reaction.* **(2)**

SECTION – C

26. Define Limiting reagent. **(3)**

Nitrogen and Hydrogen react with each other to give ammonia as per the equation, $N_{2(g)} + 3\,H_{2(g)} \rightleftharpoons 2NH_{3(g)}$. Find out the limiting reagent and calculate the mass of ammonia produced if 2.00×10^3 g nitrogen reacts with 1.00×10^3 g of hydrogen.

27. **(a)** First ionization enthalpy of Na is less than that of Mg but its second ionization enthalpy is higher than that of Mg. Why? **(3)**

(b) Arrange $N^{3-}, O^{2-}, Mg^{2+}, F^-, Al^{3+}, Na^+$ in order of increasing ionic radii.

(c) Would you expect second electron gain enthalpy of Oxygen to be positive, more negative or less negative than its first electron gain enthalpy? Justify your answer.

28. A photon of wavelength $4 \times 10^{-7} m$ strikes on metal surface, the work function of the metal being 2.13 eV. Calculate **(i)** the energy of the photon **(ii)** the kinetic energy of the emission. (leV = 1.6020×10^{-19}J) **(3)**

Contd...4

29. **(a)** What types of hydrides will be formed by the elements of atomic numbers 19 and 23 with hydrogen?

(b) P-block elements generally form covalent hydrides with hydrogen. Predict the nature of following covalent hydrides : (i) CH_4 (ii) NH_3 **(3)**

30. A mixture of 1.57 mol of N_2, 1.92 mol of H_2 and 8.13 mol of NH_3 is introduced into a 20 L reaction vessel-at 500 K. At this temperature, the equilibrium constant, K_c, for the reaction, $N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)}$ is 1.7×10^2. Is the reaction mixture at equilibrium? If not, what is the direction of the net reaction? **(3)**

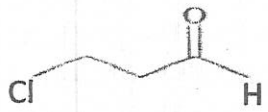
OR

Find out the value of Kc for the following equilibrium from the value of Kp :

$2NOCl_{(g)} \rightleftharpoons 2NO_{(g)} + Cl_{2(g)}$, $Kp = 1.8 \times 10^{-2}$ at 500 K.

Also, calculate the K_c for the reverse of above reaction.

SECTION – D

31. **(a)** Write IUPAC name of the compound  **(5)**

(b) Indicate the numbers of σ ad π bonds in the molecule, $CH_2 = C = CH_2$.

(c) Draw resonating structure of C_6H_5OH.

(d) Write functional isomers of compound with molecular formula C_3H_6O.

OR

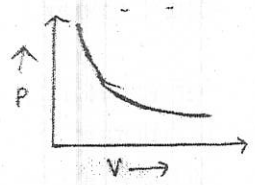
(a) Draw the structural formula of 2, 2, 4 – Tri methyl pentane.

(b) Write the type of hybridization of each carbon in $CH_2 = CHCN$

(c) Draw resonating structures of $C_6H_5NO_2$.

(d) Write metamers for the compound with molecular formula $C_4H_{10}O$.

32. **(a)** Write the statement for the gas law depicted by the following graph. **(5)**

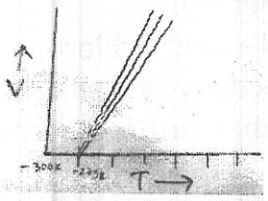


(b) Under what conditions, a real gas show ideal behavior?

(c) Pressure of 1 g of an ideal gas A at 27^0c is found to be 2 bar. When 2 g of another ideal gas B is introduced in the same flask at same temperature the pressure becomes 3bar. Find the relationship between their molecular masses.

OR

(a) Write the statement for the gas law depicted by the following graph.



(b) What will be the value of compressibility factor (Z) for real gas above its Boyle's point?

(c) 2.9 g of a gas at 95^0c occupied the same volume at 0.184 g of Hydrogen at 17^0C and at same pressure. What is the molar mass of the gas?

33. **(a)** Write short note onWurtz Reaction. **(5)**

(b) Write the IUPAC names of the products obtained by ozonolysis of 2-Ethyl-but-1-ene.

(c) Complete te following reactions :

(i) $CH_3CH = C(CH_3)_2 + HBr \xrightarrow[of\ peroxide]{absence} ?$ (ii) $CH_3\underset{\displaystyle CH_3}{\underset{|}{C}}HOH \xrightarrow[\Delta]{conc.H_2SO_4} ?$

OR

(a) Write short note on Kolbe's electrolytic reduction.

(b) Draw the structural formula and write IUPAC name of the alkene which on ozonolysis gives Propanal and Pentam -3-one.

(c) Complete the following reaction : **(i)** $H_3C - \underset{\displaystyle CH_3}{\underset{|}{\overset{\displaystyle CH_3}{\overset{|}{C}}}} - Cl + alc.KOH \xrightarrow{\Delta} ?$

(ii) $Hexane \xrightarrow[773\ K, 10-20\ atms.]{\Delta, CrO_3 / V_2O_5 / M_0O_2} ?$

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020-21
SUBJECT – BIOLOGY

Class : XI
Date : 17.03.2021

Max. Marks : 70
Time : 3 Hrs.

General Instructions:

1. All questions are compulsory.
2. The question paper has four sections. Section A, B, C and D.
   There are 33 questions in the question paper.
3. Section - **A** has 14 questions of 1 mark each and 2 case-based questions.
   Section - **B** has 9 questions of 2 marks each and
   Section - **C** has 5 questions of 3 marks each and
   Section - **D** has 3 questions of 5 marks each.
4. There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt any one of the alternatives in such questions.
5. Wherever necessary, neat and properly labelled diagrams should be drawn.

SECTION – A

1. Outline the path of water movement in most simple type of canal system of Porifera. **(1)**

2. Name the type of fibres present in areolar tissues. **(1)**

3. Give one difference between dense regular and dense irregular tissues. **(1)**

4. What are Prions? **(1)**

5. In a flower, the petals in a whorl just touch one another at the margins, without overlapping. Name the type of aestivation and give one example. **(1)**

6. Name the bone forming cells in human body. **(1)**

7. Name the characteristic of a zwitter ion. **(1)**

8. How does a cell get rid of its defective organelles? **(1)**

9. What is meant by autoexcitability of SA node? **(1)**

10. Which step in glycolysis is associated with the utilisation of ATP? **(1)**

Direction (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

11. **Assertion** (A) : In binomial nomenclature both words are separately underlined. **(1)**
Reason (R) : Underline indicates their Latin origin.

OR

Assertion (A) : Phycomycetes are called sac-fungi.
Reason (R) : Members of Phycomycetes are free living.

12. **Assertion** (A) : In molluscs, feather like gills are present in mantle cavity. **(1)**
Reason (R) : Gills perform respiratory and excretory functions in nature.

13. **Assertion** (A) : The cymose type of inflorescence has limited growth. **(1)**
Reason (R) : In cymose inflorescence, the main axis terminates in a flower.

14. **Assertion** (A) : Ethylene promotes the number of fruits in cucumber. **(1)**
Reason (R) : It promotes maleness in plants.

Contd...2

15. **Direction :** Read the following and answer any **four** questions from 15 (i) to 15 (v) given 4 below:

Bryophytes are small, non-vascular plants. They are seedless plants that are primarily found in damp and shady environment but also inhabit diverse habitats like deserts, arctic, etc. The two main types of bryophytes are liverworts and mosses. Bryophytes show alternation of generation between the independent gametophyte and the dependent sporoohyte generation. They usually lack vascular system and the body is thalloid.

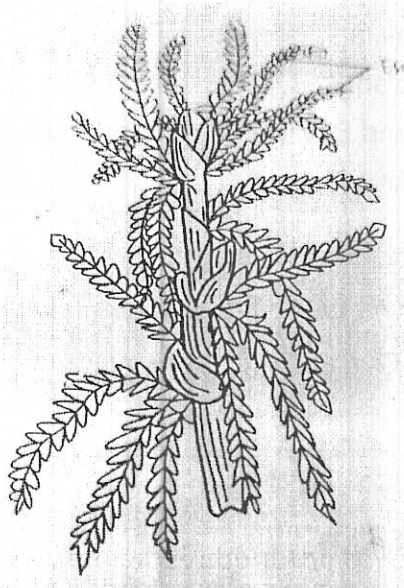
(i) A bryophyte found in dry habitat is
   (a) Polytrichum
   (b) Marchantia
   (c) Riccia
   (d) All of the above

(ii) The thallus of bryophytes
   (a) possesses roots
   (b) bears very small leaves
   (c) is more differentiated than that of algae.
   (d) All of the above.

(iii) The female sex organ in bryophytes is
   (a) conspicuous and reduced
   (b) flask -shaped structure of thallus
   (c) called sporophyll
   (d) Both (a) and (b)

(iv) Peat moss is
   (i) Funaria
   (ii) Riccia
   (iii) Sphagnum
   (iv) Marchantia

(v) Identify the correct characteristics about the bryophyte species shown in diagram



I. The given diagram represent Sphagnum gametophyte.
II. The given species is a liverwort.
III. Has good water retention.
IV. Has an elaborate mechanism of spores dispersal.

Codes

(a) II and III (b) I and IV (c) II,III and IV (d) I,II and IV

Contd 3

16. **Direction:** Read the following and answer any **four** questions from 16 (i) to 16 (v) given 4 below:

Neurons are electrically excitable cells whose membranes remain in polarised state due to the presence of selectively permeable ion channels.

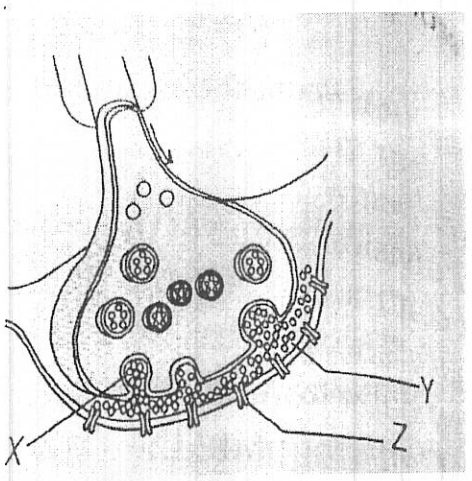
When the nerve is not conducting any impulse, the membrane potential is called resting membrane potential. It is generated due to concentration gradient of sodium (Na+) and potassium (K+) ions across membrane. The movement of these ions cross through the Na+-K+ pump. As soon as the stimulus is arrived at neuronal membrane, the movement of ions changes the polarity of membrane and it is said to be depolarised. This condition is however restored soon and membranes attains its previous state by the process of repolarisation.

(i) In resting stage, the axonal membrane for negatively charged proteins found in axoplasm is
- (a) permeable
- (b) partially permeable
- (c) impermeable
- (d) selectively permeable

(ii) When stimulus is applied at a site on polarised membrane, it becomes freely permeable to
- (a) Na+
- (b) K+
- (c) Na+ and K+
- (d) K+ and Cl-

(iii) In a resting membrane,Na+-K+ transport
- (a) 3K+ inside
- (b) 3 Na+ outside
- (c) 2K+ inside and 2 Na+ outside
- (d) Both (a) and (b)

(iv) The electrical potential difference across depolarised membrane is called
- (a) synapsis
- (b) action potential
- (c) conduct ability
- (d) neuronal potential



(v) Regarding the given diagram, identify the correct statements and choose the correct option.
- I. X contain the hormone epinephrine.
- II. Y is known as synaptic cleft.
- III. Z open upon binding with the substance released by X.
- IV. X release its substance in response to stimulus given by nerve impulse.

Codes
- (a) I and III
- (b) II,III and IV
- (c) I,III and IV
- (d) I and IV

Contd. 4

SECTION-B

17. Name the photosynthetic groups of kingdom Protists. Which group of them constitute phytoplanktons in the oceans? **(2)**

18. 'Cell X contains 32 chromosomes.It is divided by mitosis to produce cells Y and Z which contains 32 chromosomes each.' Deduce the information from the statement regarding mitosis. **(2)**

19. Mention any two steps during which dehydrogenation occurs in Krebs or TCA cycle. (flow chart only) **(2)**

20. Give an example for each of the following:-
    (a) A fish possessing a poison sting.
    (b) A fish possessing an electric organ.
    (c) An organ which regulates buoyancy.
    (d) Animal which exhibits alternation of generation.

21. A cyclic process is occurring in C3 plants which is light dependent and needs oxygen. This process does not produce energy but rather consumes energy. **(2)**
    (i) Name the process involved.
    (ii) Where does it occur?

22. A person visited agricultural fields and observed that the growth yield of sugarcane crop is very low and discussed the application of some PGRs. (Plant growth regulators). **(2)**
    (i) What are PGRs? Name two PGRs.
    (ii) How can the yield of sugarcane be increased?

23. What is limbic lobe or limbic system? What is its function along with hypothalamus?

OR

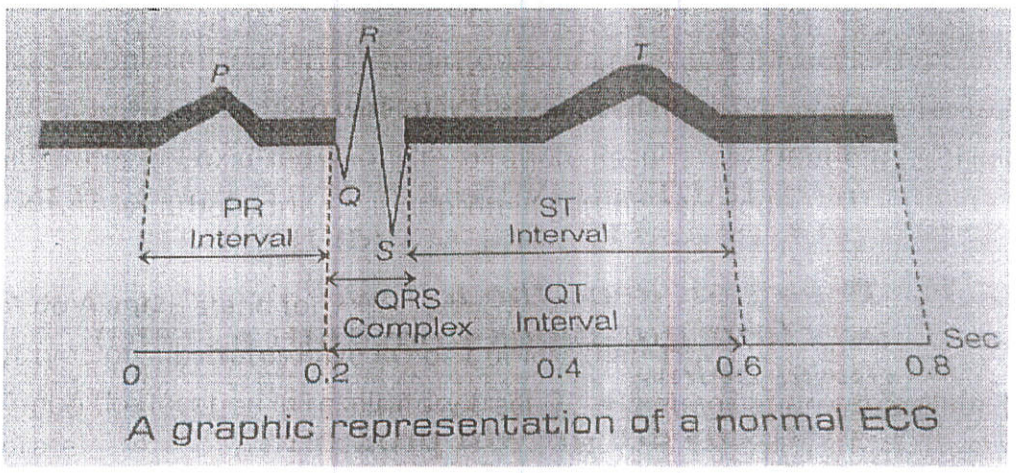
Sarcolemma, sarcoplasm and sarcoplasmic reticulum refer to a particular type of cell in our body. What is this cell and to what parts of that cell do these names refer to? **(2)**

24. Different substrates get oxidised during respiration. Respiratory Quotient (RQ) indicates types of substrate is carbohydrate, fat or protein getting oxidized. **(2)**
    RQ=A/B
    (i) What do A and B stand for ?
    (ii) What type of substrates have RQ of 1 or less than 1?

25. Depending upon the location in respiratory tract O2--Hb dissociation curve shifts to left or right. Elaborate. **(2)**

OR

Given below is the diagram of ECG. Study the diagram and answer the following questions:



A graphic representation of a normal ECG

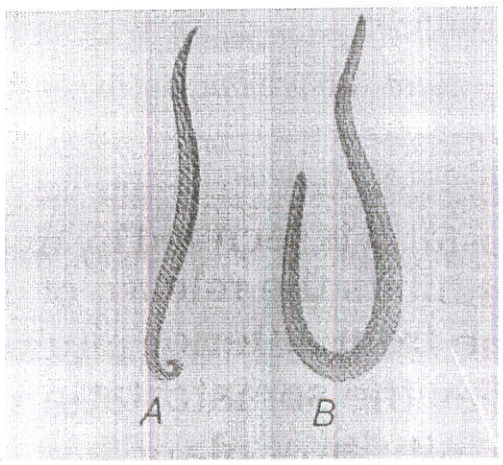
(i) State the time of completion of one cardiac cycle.
(ii) What does QRS-complex represent?

SECTION – C

26. What is gynoecium ? Define the term placentation. Explain any four types of placentation. **(3)**

Contd...5

27.



(i) Identify A and B. **(3)**

(ii) Name the phylum to which the above specimen belong and give two features of it.

(iii) Give one point of difference between 'A' and 'B'.

28. Draw neat labelled diagrams of (a) **Actin**(thin filament) (b) **Myosin monomer** (Meromyosin) **(3)**

OR

Draw a neat labelled diagram of **Human Heart:**

(i) Mark the following on it:

(a) **chordae tendineae**

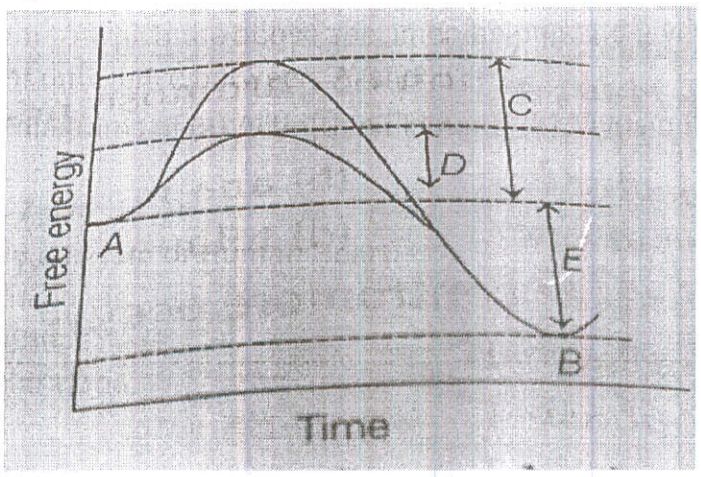
(b) **atrioventricular node**

(c) **Bundle of His**

(d) **aorta**

(ii) What is stroke volume and cardiac output?

29. Observe the given figure related to enzyme action and answer the following questions:

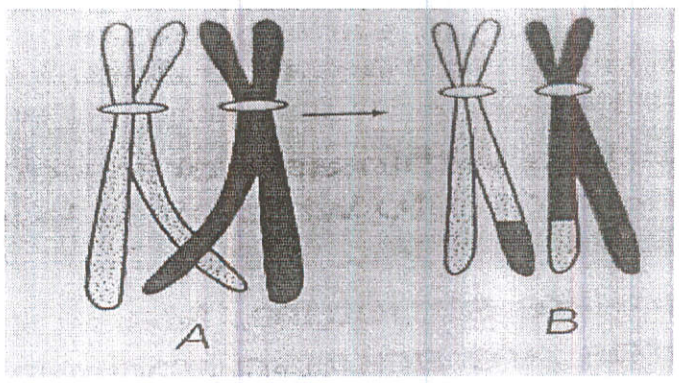


(i) What does the figure depict? Define it.

(ii) Name the substances marked as A and B.

(iii) What do the arrows marked C to E indicate and what does it signify? **(3)**

30. Observe the figure given below which represents a certain event at a particular stage of cell division. **(3)**



(i) Identify the event represented by the figure.

(ii) This event is characteristic of which stage and type of cell division?

(iii) State the advantage of this process in sexually reproducing organisms.

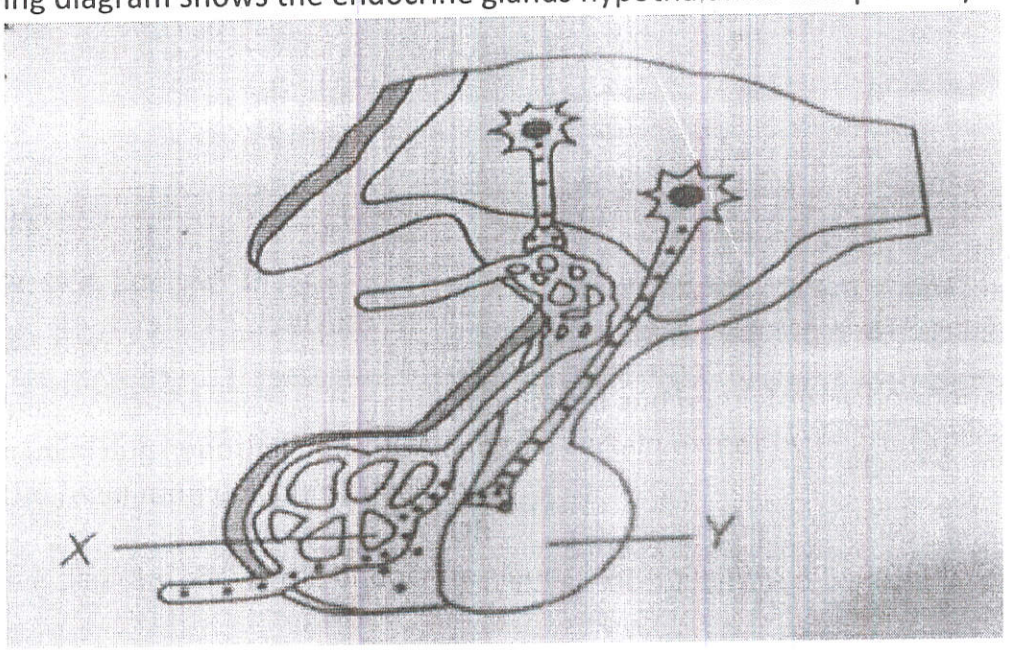
Contd...6

SECTION –D

31. The functioning of the kidney is efficiently monitored and regulated by hormonal feedback mechanism involving hypothalamus, JGA and to a certain extent by heart. Explain the role of each in the regulation of kidney function. **(5)**

OR

The following diagram shows the endocrine glands hypothalamus and pituitary:



(i) Identify the part labelled as X and name any four hormones released by it.

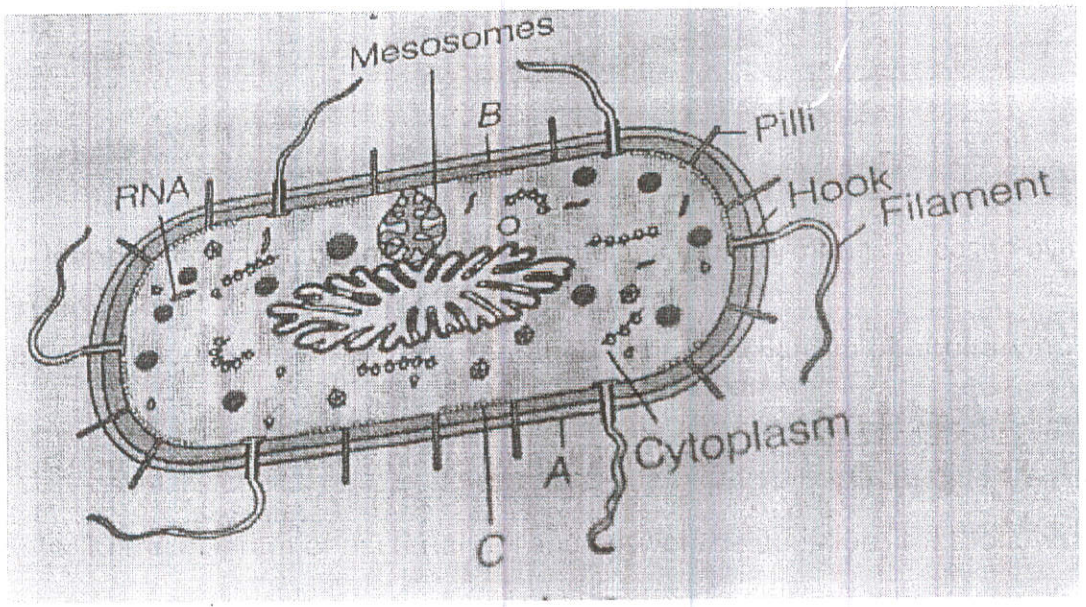
(ii) How does the part X differ from Y functionally?

(iii) Give the diagrammatic representation of the mechanism of pituitary hormones (hormonal action).

32. Describe the events taking place during **Interphase.** **(5)**

OR

Refer to the diagram of bacterial cell and answer the questions that follows:



(i) Identify **A**, mention its composition and function.

(ii) What is the basic composition of part labelled as **B**? What is its function in bacterial cell?

(iii) Which among the structures **(A,B,C)** form mesosome? What are its functions?

33. (i) Tabulate the differences between cyclic and non-cyclic photophosphorylation. (at least four differences)

(ii) Diagrammatically explain C4 pathway in plants. **(5)**

OR

What is ETS in respiratory process? Where is it present? Explain the four complexes from I to IV in ETS.

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020-21
SUBJECT – ACCOUNTANCY

Class : XI
Date : 19.03.2021

Max. Marks : 80
Time : 3 Hrs.

GENERAL INSTRUCTIONS:

1. This question paper contains two parts A and B.
2. All questions in both the parts are compulsory.
3. All parts of a question must be attempted at one place.
4. Each question carries marks indicated against it.
5. Answers should be brief and to the point.
6. Draw formats and show your workings wherever required.

Part – A
Financial Accounting – I

1. Which of the following is not an internal user of accounting information?
   (a) Board of Directors (b) Managers (c) Workers and Clerks (d) Creditors (1)
2. A liability arises because of:
   (a) Cash transactions (b) Credit transactions (c) Both (a) and (b) (d) Neither (a) nor (b) (1)
3. During the life-time of an entity, accounting produces financial statements in accordance with _____ concept.
   (a) Matching (b) Conservatism (c) Accounting Period (d) Going Concern (1)
4. Aaryan commenced business on 1st January, 2020 with a capital of ₹ 6,00,000. On 31st December, 2020 his assets were worth ₹ 8,00,000 and liabilities ₹ 50,000. His closing capital would be:
   (a) ₹ 7,50,000 (b) ₹ 1,50,000 (c) ₹ 2,00,000 (d) ₹ 5,50,000 (1)
5. Which of the following accounts has a credit balance?
   (a) Carriage Inward (b) Carriage Outward (c) Return Inward (d) Return Outward (1)
6. Match the following:

(A) Income earned but not yet received	(i) Compound Entry
(B) Journal entry involving more than one account	(ii) Cash Discount
(C) Expenses due but not paid	(iii) Asset
(D) Allowance made for prompt payment	(iv) Liability

   (a) A (i), B (iii), C (iv), D (ii) (b) A (iii), B (i), C (iv), D (ii)
   (c) A (ii), B (iv), C (i), D (iii) (d) A (iv), B (ii), C (i), D (iii) (1)
7. Which of the following items will be shown as debit balance in the Trial Balance:
   (a) Accrued Rent (b) Unearned Rent (c) Outstanding Rent (d) Rent Received (1)
8. Profit on sale of fixed assets is an example of:
   (a) General Reserve (b) Specific Reserve (c) Capital Reserve (d) Revenue Reserve (1)
9. Which of the following is not an Error of Principle?
   (a) Purchase of a computer debited to Purchases Account.
   (b) Annual Repair expenses of a machine debited to Machinery Account.
   (c) Sale of Old Furniture credited to Sales Account.
   (d) Cash received from Vinay credited to Vijay. (1)
10. A Bill of ₹ 15,000 drawn by Amit upon Ashish on 9th December, 2020 payable after 45 days will
    (a) 26th January, 2021 (b) 25th January, 2021 (c) 23rd January, 2021 (d) 27th January, 2021 (1)
11. Identify if the following statement is correct or not:
    "Credit Voucher is a document for having deposits made in the bank." (1)
12. Fill in the blank space with appropriate word:
    "Repair expenses paid on purchase of old machine purchased is posted to the debit of _____ Account." (1)
13. State reason for the following:
    "Contra entries in the Two-Column Cash Book are not posted into the Ledger." (1)
14. Explain the following Attributes of Accounting with the help of example:
    (a) Measuring the identified transactions
    (b) Analysis and Interpretation

    OR

    Explain the following basic terms of accounting with two examples of each:
    (a) Capital Expenditure
    (b) Liquid Assets

    (3)

Contd...2

15. Record the following transactions in the Day Book of M/s Hari Prasad & Sons, Mahasamund:

2021

Jan., 1 Issued cheque as advance for Machinery ₹ 80,000.

Jan., 7 Purchased goods from Vimal of ₹ 2,00,000 less 25% Trade Discount and paid 60% amount immediately availing Cash Discount of 2%.

Jan., 11 Paid Life Insurance Premium ₹ 10,000 of Hari Prasad by Bank Draft. Paid bank charges ₹ 100.

Jan., 20 Received cheque of ₹ 22,050 from Raman after a Cash Discount of 2%. The cheque has not been deposited in the Bank yet. (4)

16. From the following transactions of M/s. Hemant Traders, Raipur, prepare Sales Book:

2020

July, 1 Sold to M/s. Sunita Tea, Baroda, vide Invoice No. 210, 3 Chests of Darjeeling Tea for ₹ 5,000 per Chest less Trade Discount @ 5%.

July, 8 Sold to M/s. Tarun & Bros., Surajpur vide Invoice No. 211, 20 Kg. Amul Butter @ ₹ 250 per Kg. less Trade Discount @ 5%.

July, 14 Sold to M/s. Basant & Sons, Durg vide Invoice No. 212, 20 Kg. Assam Tea @ ₹ 600 per Kg. less Trade Discount @ 5%. Freight and Packing Charges were separately charged in the Invoice at ₹ 1,600.

July, 20 Sold 10 Kg. Amul Butter to M/s. Sahu Traders for cash @ ₹ 250 per Kg.

July, 25 Sold office furniture to Rajan & Co. for ₹ 10,000 (4)

17. On 31st January, 2021, Pass Book of Shri Gyanesh Sahu shows a debit of ₹ 10,000. From the following, prepare Bank Reconciliation Statement:

(i) Cheques amounting to ₹ 8,000 drawn on 25th January, 2021 of which cheques of ₹ 5,000 were encashed on 4th February, 2021.

(ii) Cheques deposited into the bank for collection ₹ 5,000 but cheques of ₹ 2,200 could only be collected in January, 2021.

(iii) Bank Charges of ₹ 25 and dividend of ₹ 350 on investments collected by the bank could not be shown in the Cash Book.

(iv) A bill of ₹ 10,000 was retired by the bank under rebate of ₹ 150 but the full amount was credited in the bank column of Cash Book. (4)

18. Rectify the following errors by passing Journal Entries:

(i) ₹ 1,000 received from Chanchal was debited to her account.

(ii) Bill for ₹ 800 received from Mukesh for repair of machinery was entered in the Purchases Book as ₹ 700.

(iii) Return of goods worth ₹ 5,000 by Hari, a customer was entered in the Purchases Returns Book.

(iv) Sales Book carried forward ₹ 41 less on Page 10 and ₹ 43 more on Page 12. (4)

19. On 1st September, 2020, Amit drew a bill on Ajay for ₹ 50,000 payable after 3 months. Ajay accepted the bill and returned it to Amit. After 10 days, Amit endorsed the bill to his creditor, Atul. On the due date, the bill was dishonoured and Atul paid ₹ 1,000 as noting charges. Record the transactions in the books of Amit, Ajay and Atul. (6)

20. What do you understand by Accrual Assumption of Accounting? When is profit regarded as earned under this assumption? Determine the income under Accrual Basis of Accounting in the following case: Vijay, a consultant, during the financial year 2019-20 earned ₹ 4,00,000. Out of which he received ₹ 3,50,000. He incurred an expense of ₹ 1,70,000, out of which ₹ 40,000 are outstanding. He also received consultancy fee relating to previous year ₹ 45,000 and paid ₹ 20,000 expenses of last year.

OR

Explain the following principles with examples in about 60 words each:

(i) Money Measurement Principle

(ii) Matching Principle

(iii) Dual Aspect Principle (6)

21. Ashoka Ltd. purchased a machine on 1st April, 2017 for ₹ 2,40,000 and spent ₹ 4,000 on its carriage and ₹ 6,000 towards installation cost. On 1st July, 2018, it purchased second-hand machinery for ₹ 75,000 and spent ₹ 25,000 towards its overhauling. On 1st January, 2020, it sold the machinery bought on 1st April, 2017 at a loss of ₹ 20,000. It bought another machine on the same date for ₹ 40,000. Company charges depreciation @ 15 p.a. on written down value method. Prepare Machinery Account.

OR

Contd...3

Enter the following transactions in a cash book with Cash and Bank columns:

2020

Nov., 1 Cash in hand ₹ 15,000; Cash at Bank ₹ 8,000.
Nov., 2 Sold goods to Rajan on credit for ₹ 10,000.
Nov., 5 Sold goods to Mittal for ₹ 20,000; received cheque from them after a discount of 2½%. Cheque was deposited into bank on 7th November.
Nov., 10 Purchased goods of ₹ 20,000 from Suman on the terms of 5% cash discount, if the payment is made within 3 days.
Nov., 12 Payment made to Suman; half in cash and half by cheque.
Nov., 14 Received a Bank Draft for ₹ 6,820 from Sampat in full settlement of ₹ 7,000 due from him. Sent the draft to the bank.
Nov., 16 Settled Puneet's account of ₹ 5,000 at a discount of 5%.
Nov., 17 Goods worth ₹ 8,000 were purchased from Sunil on 5th November. Its payment was made today by a cheque after deducting 5% cash discount.
Nov., 18 Withdrawn from Bank ₹ 20,000 and Furniture was purchased for ₹ 15,000; the balance was taken by the proprietor.
Nov., 20 Received a cheque from Shankar of ₹ 2,800. Endorsed the cheque to Shiv on 22nd November.
Nov., 22 Placed an order with Jay Traders for goods of the value of ₹ 10,000 and sent a cheque of ₹ 8,000 with the order.
Nov., 23 Purchased furniture by cheque of ₹ 6,000.
Nov., 24 Cash sales ₹ 15,000; half of which is deposited into bank.
Nov., 27 Paid rent to Landlord 'Ranjeet' by cheque ₹ 2,000.
Nov., 28 Cashed a cheque for ₹ 10,000 and paid salaries in cash ₹ 8,000.
Nov., 30 Deposited into bank, balance of cash in excess of ₹ 5,000. (8)

Part – B

Financial Accounting – II

22. Gross Profit ₹ 50,000; Salaries ₹ 5,800; Rent Paid ₹ 6,000; Old Provision for Doubtful Debts ₹ 2,000; Commission Received ₹ 4,000; Wages and Salaries ₹ 8,000 and Carriage ₹ 200. There are no adjustments to be made. Net Profit of the firm will be:
(a) ₹ 44,200 (b) ₹ 42,200
(c) ₹ 40,200 (d) ₹ 36,000 (1)

23. On 1st February, 2020, Investments of ₹ 1,00,000 was made in 12% Government Securities. Interest was received for 3 months from February to April 2020. In the Financial Statements for the year ended 31st March, 2020, amount of Advance Interest would be:
(a) ₹ 1,200 (b) ₹ 3,600
(c) ₹ 1,000 (d) ₹ 4,800 (1)

24. Single Entry System can be adopted by:
(a) Super Bazars (b) Small Shopkeepers
(c) Cooperative Societies (d) Joint Stock Companies (1)

25. Expenditure incurred on a fixed asset which increases the earning capacity is accounted as:
(a) General Expenditure (b) Revenue Expenditure
(c) Deferred Revenue Expenditure (d) Capital Expenditure (1)

26. State whether the following Statement is True or False?
"Freight and Cartage Expenses paid on purchases of goods are added to Purchases amount on the debit side of Trading Account." (1)

27. Fill in the blank space:
The standard arrangement of alphabetic keys in a keyboard is known as _____ Keyboard. (1)

28. Calculate Closing Stock from the following:
Opening Stock ₹ 36,000; Net Purchases ₹ 45,000; Salaries and Wages ₹ 7,000; Sales ₹ 60,000; Gross Loss ₹ 4,000; Freight Inwards ₹ 6,000. (1)

29. Explain any three capabilities of a computer system. (3)

30. Explain any four disadvantages of Computerised Accounting.

OR

Explain meaning of the following terms in 40 words each:
(a) Humanware (b) Debtors' Report
(b) Information System (d) Microprocessor (4)

31. Prateek commenced business on 1st April, 2019, with a capital of ₹ 1,00,000, which he paid into bank account opened for that purpose. On the same date, he bought furniture which cost ₹ 20,000 and made purchases of goods worth ₹ 65,000. He kept his books on Single Entry basis. On 31st March, 2020, stock

Contd...4

was valued at ₹ 83,000. There were book debts amounting to ₹ 32,000. Creditors amounted to ₹ 36,000 and bank pass book showed a balance of ₹ 14,500. Prateek withdrew three times from business for his private expenses, each time he withdrew ₹ 6,000 and in addition, he used ₹ 5,000 worth of goods from his shop. He took ₹ 10,000 as loan from his wife during the year. He gave ₹ 2,000 to his son from business, which he omitted to enter.

You are required to prepare a statement showing Profit or Loss in the business for the year ending

(a) Furniture is to be depreciated at 10%.

(b) A Provision of 5% is to be made against debtors. (6)

32. On 31st March, 2020, the following Trial Balance was extracted from the books of M/s Hari Nath Traders, Baloda:

Trial Balance
As on 31st March, 2020

Particulars	Debit (₹)	Credit (₹)
Capital		30,000
Drawings	5,000	
Debtors and Creditors	20,700	10,000
10% Loan (Taken on 1.10.2019)		8,500
Interest on Loan	300	
Cash	2,000	
Provision for Doubtful Debts		1,700
Stock on 1.4.2019	6,800	
Motor Vehicle	10,000	
Bank	3,500	
Machinery	12,000	
Bad Debts	500	
Purchases and Sales	66,000	1,10,000
Returns	8,000	1,500
Carriage Outward	2,500	
Carriage Inward	3,000	
Salaries	9,000	
Rent and Insurance	3,000	
Advertising	3,500	
Discount		1,200
General Expenses	3,400	
Bills Receivable and Bills Payable	6,000	2,000
Rent Received		300
	1,65,200	1,65,200

Prepare Trading and Profit and Loss Account for the year ended 31st March, 2020 and Balance Sheet as on that date after taking into account the following adjustments:

(1) Machinery includes machinery purchased on 1st October, 2019 for ₹ 2,000. Depreciate machinery @ 20% p.a.

(2) Depreciate motor vehicle at 20%.

(3) Salaries outstanding ₹ 200.

(4) Insurance includes a premium of ₹ 400 on a policy expiring on 30th September, 2020.

(5) Write off Bad Debts ₹ 700 and Provision for Doubtful Debts is to be maintained at 5% on Debtors.

(6) Stock on 31st March, 2020 was valued at ₹ 7,000.

OR

Following are the extracts of a Trial Balance as on 31st March, 2020:

Particulars	Debit (₹)	Credit (₹)
Sundry Debtors	26,500	
Bad Debts	700	
Rent Received		28,000
Provision for Doubtful Debts		2,700

Additional Information:

(1) Rent received for 14 months.

(2) Write off further bad debts ₹ 500.

(3) Create provision for doubtful debts @ 5% on debtors.

(4) Create a provision for discount @ 2% on debtors.

You are required to pass necessary adjustment entries, prepare Bad Debts Account and Provision for Doubtful Debts Account and show the relevant items in the Profit and Loss Account and the Balance Sheet. (8)

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020-21
SUBJECT – BUSINESS STUDIES

Class : XI **Max. Marks : 80**
Date : 22.03.2021 **Time : 3 Hrs.**

GENERAL INSTRUCTIONS :

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

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01. The reward for conducting business and bearing the risk is, in the form of **(1)**
(a) Remuneration (b) Commission (c) Bonus (d) Profit

02. The capital of a company is divided into number of parts. Each part is called: **(1)**
(a) Dividend (b) Profit (c) Interest (d) Share

03. Which of the following enterprise is formed as a part of government and does not have a separate legal entity? **(1)**
(a) Public Corporation (b) Government Company
(c) Departmental Undertaking (d) Public Limited Company

04. The deposits in this bank account generally do not carry any interest: **(1)**
(a) Current Account (b) Savings Account
(c) Recurring Account (d) Fixed Deposit Account

05. Rishi sells his mobile through quicker.com. It is an example of which type of transaction? **(1)**
(a) B2C (b) C2C (c) B2C (d) B2B

06. Producing goods and services as per the needs of the society is an example of the responsibility of business towards : **(1)**
(a) Consumer (b) Workers (c) Community (d) Shareholders

07. The source of finance available in the normal course of purchase of goods is : **(1)**
(a) Overdraft (b) Trade Credit (c) Public Deposit (d) Debentures

08. The retailer acts as a link between: **(1)**
(a) Consumer and Manufacturer (b) Consumer and Wholesaler
(c) Manufacturer and Wholesaler (d) None of the above

09. Which of the following is not an intellectual property? **(1)**
(a) Patent (b) Trademark (c) Consumer Product (d) Copy right

10. Which of the following is not a feature of International Trade : **(1)**
(a) Use of foreign exchange (b) Heavy documentation
(c) Time Consuming (d) Has personal touch

OR

Purchasing and selling goods in small quantities within the geographical boundaries of a country is known as : **(1)**
(a) Wholesale (b) Export (c) Retail (d) Entrepot

11. Which of the following is not a function of insurance? **(1)**
(a) Protection of life (b) Protection of property
(c) Risk Sharing (d) Accepting loans/deposits from public

12. Debentures represent **(1)**
(a) Fixed capital of the company (b) Fluctuating capital of the company
(c) Loan capital of the company (d) Permanent capital of the company

OR

……. Document is also called as charter of the company.
(a) Articles of Association (b) Prospectus
(b) Memorandum of Association (d) Certificate of Incorporation

Contd…2

Read the following text and answer question no. 13 to 16 on the basis of the same :

Dhruv, Sarthak and Dheeraj are three partners in a firm. The name of the firm is Friends Pustak Bhandar. The latest books of almost all subjects remain available at the Pustak Bhandar. All the three partners decided that 10% of the total profit would be distributed among the poor children every year. This has a very positive effect on the goodwill of the firtm and also on the profits. Dheeraj is a renowned businessman who allowed the use of his name by the firm, but does not contribute capital. Sarthak had contributed capital to the firm but does not participate in the management of the firm. Dhruv actively participates in the management and does business on behalf of partners. As the profits of the firm was continuously rising, the partners decided to expand the business by including more partners who can contribute more funds to the business.

13. What is the maximum limit on the number of partners in a partnership firm ? **(1)**

(a) 200 (b) 50 (c) 20 (d) 7

14. What kind of partner is Dheeraj? **(1)**

(a) Active Partner (b) Sleeping Partner (c) Secret Partner (d) Nominal Partner

15. What kind of partner is Sarthak ? **(1)**

(a) Partner by Estoppel (b) Partner by holding out

(c) Active Partner (d) Dormant Partner

16. Identify the kind of partnership on the basis of duration. **(1)**

(a) General Partnership (b) Particular Partnership

(c) Partnership at Will (d) Limited Partnership

Read the following text and answer questions 17-20 on the basis of the same:

Kalpesh is pursuing an MBA course in Bangalore. In a discussion on 'career options' in the class room, he shared with his class mates that he is a member of a business by his birth. His uncle Durgesh takes all the decisions related to the business. Kalpesh reveals that though he is a member in the business, he doesn't have the right to take any decision regarding the business.

17. Identify the form of business organization being described in the above lines. **(1)**

(a) Sole Proprietorship (b) Partnership

(c) Cooperative Society (d) Hindu Undivided Family business

18. The status enjoyed by Kalpesh is that of **(1)**

(a) Director (b) Co-Parcener (c) Karta (d) Partner

19. Kalpesh's liability is : **(1)**

(a) Unlimited (b) Limited (c) Limited for some time (d) none of the above

20. Continuity of such business is affected by **(1)**

(a) Kalpesh's death (b) Durgesh's death (c) both a and b (d) none of the above

21. Yamuna Ltd. Invited applications from general public to subscribe for its public issue of ₹ 10 crore (10 lakh shares of ₹ 100 each) through issue of prospectus. The company received applications for 8 lakh shares. **(1+2)**

(a) Can the company proceed with allotment of shares?

(b) Give reason in support of your answer in (a) above.

22. Sambhav has an innovative idea to recycle waste products and make decoration items out of it. For starting the business he needs funds. Some of the finance required for the project has been managed by Sambhav himself. For the remaining funds he is stuck up. **(1+2)**

(a) What is the fund introduced by Sambhav called?

(b) Write 2 other ways of funding from which Sambhav can arrange funds.

OR

Rahul insured his factory for ₹ 45 lakhs against fire. Due to fire he suffered a loss of stock worth ₹ 24 lakhs.

(a) How much amount can he recover from the insurance company?

(b) State and explain the relevant insurance principle in this regard.

Contd…3

23. Sameera has ₹ 32,50,000 balance in her Savings Bank Account in Axis Bank. She has a good salary and at the end of every month, her balance in the savings account increases. Roshni her close friend, advised her to maintain an account which is a combination of both savings account and fixed deposit account. Roshni told Sameera that this account interlinks the savings bank account with a deposit account and any amount in excess of a predetermined amount is automatically transferred to a fixed deposit and it will enable her to earn better interest. **(1+2)**

(a) Identify the type of bank account advised by Roshni to Sameera.
(b) Write two features of the account identified in (a) above by quoting lines from the paragraph.

24. Mr. Govind is going for a foreign assignment for a period of three years. He sold all his furniture and earned money more than he had spent to purchase the same. **(1+1+1)**

(a) Will this activity be considered as a business?
(b) Which characteristic of business is stressed upon in the above example?
(c) Write one more feature of business.

OR

Puma Stores are networks of retail shops owned and operated by Puma Company. These shops operate in different parts of the country. One can easily identify these shops in any part of the country as they have the same appearance. All the shops are supplied the goods from the head office only and all the policies for all the branches are made by the head office only. Even the goods are sold at uniform prices. **(1+2)**

(a) State the type of retail store mentioned in the above case.
(b) Write two features of the store identified in (a) by quoting lines from the text.

25. "Profits play an important role in the business." Give any four reasons to justify the statement. **(4)**

26. Many industrial organisations have been responsible for causing air, water, land and noise pollution. People are now raising their voice against pollution generating activities. Business enterprises cannot remain unaffected by environmental destruction. **(4)**

In the light of the above, explain what role can business play in environmental protection.

27. 'Avika Ltd." Company registered in India, is planning to raise funds by issue of equity shares for its growth and expansion. The directors of the company are also of the opinion that some portion of the funds should be raised from International Capital Market through equity. **(2+2)**

(a) In the above context state two merits of raising funds through equity shares.
(b) Explain the sources through which it can raise funds from international market.

OR

Akshat established a snacks manufacturing unit in Gurgaon. He invested ₹ 70,00,000 in plant and machinery. He has decided to allocate 10% profit for educational and health needs of employees and their family members. On the basis of given information, answer the following questions. **(1+1+1+1)**

(i) Which Act of industries is applicable to the above manufacturing unit?
(ii) Identify the category in which Akshat's business will be placed as per the Act identified in Part (i).
(iii) What is the maximum investment limit of the category in which Akshat's business has been placed?
(iv) What are the other categories and their investment limit specified in the Act?

28. Identify the type of industry in each of the following case : **(1+1+1+1)**

(a) Rohit is engaged in the industry of obtaining coal from a mine.
(b) Shashi has a cement factory.
(c) Shiv has a busness of poultry farming.
(d) Avni imports different components from China and assembles them to make computers.

Contd…4

29. "Project Automobiles Ltd." is a very well-known automobile company in the industry. It has more equity share capital than long term debt in its capital structure. It is willing to expand and establish new units in the backward regions. It has a huge amount of cash reserves of ₹ 500 crores. **(1+1+2)**

(i) What is the status of capital structure of the above company?
(ii) Which source of finance should be used by the company in establishing new units?
(iii) Write two merits of the source identified in (ii).

OR

Compare Departmental Undertaking and Government company on the basis of : **(4)**
(a) Formation (b) Legal Status (iii) Ownership (d) Management

30. Explain briefly any four problems faced by small business. **(4)**

31. Anamika joined her father's business. She received a monthly salary. Her elder brother is an established lawyer. Their mother is a house wife and supervises house work. (1½ + 4½)

(a) Identify the economic activities in which Anamika, her father and her brother are engaged in.
(b) Write three points of difference between the activities identified in (a).

32. Sheetal and Shilpi are close friends engaged in a discussion on benefits of trade. Shilpi feels trade between nations is highly beneficial while Sheetal feels an economy can only develop and grow if trade within the nation is strong. **(2+4)**

(i) Identify and explain the type of trade being supported by Sheetal and Shilpi.
(ii) Write two advantages and two disadvantages of trade highlighted by Shilpi.

OR

What are the contents of Memorandum of Association? Explain. **(6)**

33. Vivaan and Vibhor decided to settle down in Bengaluru. As they had to buy extensive range of products for their new house, they visited Skylark Stores, which was started by Sky group of companies. It is located in the heart of the city. It gave a complete shopping experience with e-carts, amphitheatre and centralized air-conditioning. It offered a wide variety of products, classified into well managed divisions under one roof. **(1+3+2)**

(a) Identify the type of retail store mentioned above.
(b) Write three merits of the store by quoting lines from the text.
(c) Write two limitations of such stores.

34. Inn Trin Ltd. Is a well-known company dealing in wide range of products. The company is committed to treat everyone fairly with respect and dignity, regardless of difference in age, caste, creed, gender etc. It abides by the laws and pay taxes on time. It prefers to give fair advertisement without any exaggeration and charge fairly from its customers and maintain quality. The company provided good and safe working conditions to the workers and its managers work effectively and efficiently to minimize waste and to maximize return to their shareholders. The suppliers are also paid regularly and are updated regarding the changes required in the product. The company is running a charitable hospital to provide medical facility to people of the area.

By quoting the lines from the text, identify the different interest groups towards which the company is fulfilling its social responsibilities. **(6)**

OR

With the enactment of LIC Act, 1956, an autonomous body, Life Insurance Corporation of India was formed. The act defines its powers, duties and functions. It has a separate legal entity. It is fully owned by Government. It has independent financial policy and can raise funds by borrowing from public and government. However, it is not subject to any budgetary accounting or audit control like Railways. It's annual report is presented in Parliament every year. **(1+3+2)**

(a) Identify the type of public sector enterprise referred in above case.
(b) Write three features of the enterprise identified above by quoting lines from the above pare.
(c) Write its 2 limitations.

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020-21
SUBJECT – APPLIED MATHEMATICS

Class : XI
Date : 26.03.2021

Max. Marks : 80
Time : 3 Hrs.

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.

(iv) Using of Logarithmic tables is allowed.

Part A

(*i*) It consists of two sections I and II.

(*ii*) Section I comprises of 16 very short answers type questions of 1 mark each.

(*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 provide in 4 questions of section – I, 3 questions of section –III, 2 questions of section – IV and 3 questions of section - V.
You have to attempt only one of the alternatives in all such questions.

SECTION – I

1. Given $1176 = 2^p.3^q.7^r$, *find the numerical values of* p, q *and* r.

2. Solve for x *when* $log_2(x^2 - 4) = 5$

   OR

   Find the value of x *if* $log(x+1) + log(x-1) = log11 + 2log3$

3. Write the power set P(A) of the set A = { ϕ, { ϕ , 2 }, { ϕ }}

4. Give an example of a relation R on A = {1, 2, 3} which is Symmetric and reflexive but not transitive.

5. Write the negation of the compound statement : A triangle has 3 sides or 4 sides.

6. Evaluate : $\lim_{x \to a} \left(\frac{x^{5/2} - a^{5/2}}{\sqrt{x} - \sqrt{a}} \right)$

7. If $y = log_{10} x$, *then find* $\frac{dy}{dx}$

   OR

   If $y = \frac{1}{log_7 x}$, *then find* $\frac{dy}{dx}$

8. If $(x + y)^2 = xy$, *then find* $\frac{dy}{dx}$

9. If $y = x^x$, *then find* $\frac{dy}{dx}$.

10. A card is drawn at random from a pack of 52 cards. Find the probability that the card drawn is neither a heart nor a king.

11. *Compute Karl Pearson's coefficient of skewness for a frequency distribution having* mean = 50 , mode = 56 and S.D. = 15.

Contd...2

12. In a distribution, the difference between two quartiles is 15 ; their sum is 35 and median 20, find S_{KB} (Bowley's coefficient of skewness)

13. The first four central moments of a frequency distribution are 0, 60, - 50 and 8020 respectively. Discuss the Kurtosis of the distribution.

14. Find the simple interest when principal = ₹ 8000,
$rate\ of\ interest = 10\ \%\ per\ annum\ and\ \ time\ 146\ days.$

OR

Find the simple interest when principal = ₹ 14000,
$rate\ of\ interest = 7\ \%\ per\ annum\ and\ time\ 6\ months.$

15. Determine $x\ so\ that\ 2\ is\ the\ slope\ of\ the\ line\ through\ (2,5)\ and\ (x,3).$

OR

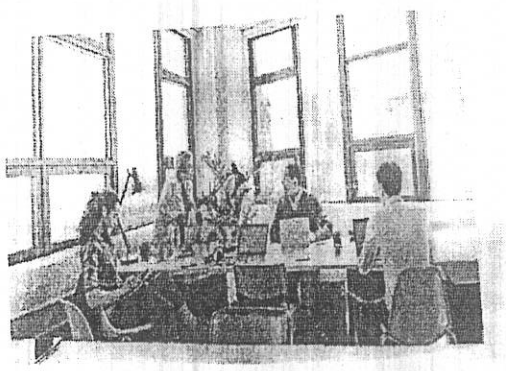
Find the centre and radius of the circle $2x^2 + 2y^2 - x + 3y = 0$

16. $Find\ x\ ,y\ ,if\ (x+3,\ 5) = (6\ ,2x+y).$

SECTION – II

Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question 17 and 18. Each sub part question carries 1 mark.

17. An insurance company insures 2000 motorcycle drivers, 4000 car drivers and 6000 truck drivers. The probability of an accident involving a motorcycle, a car and a truck is $\frac{1}{100}$, $\frac{3}{100}$ and $\frac{3}{20}$ $respectively.$



Based on the above information, answer the following

(i) One driver is chosen randomly from the insured persons, the probability that he/ she a motorcycle driver is

$(a)\frac{1}{3}$ $(b)\frac{1}{2}$ $(c)\frac{1}{6}$ $(d)\frac{3}{20}$

(ii) Probability that an insured persons meets with an accident and he is car driver is

$(a)\frac{1}{100}$ $(b)\frac{3}{100}$ $(c)\frac{3}{26}$ $(d)None\ of\ these$

(iii) Probability meet a person meets with an accident and he/she is a motorcycle driver is

$(a)\frac{1}{52}$ $(b)\frac{3}{52}$ $(c)\frac{3}{26}$ $(d)\ 1$

(iv) The total probability of meeting with an accident of insured person is

$(a)\frac{7}{600}$ $(b)\frac{13}{150}$ $(c)\frac{51}{600}$ $(d)\ 0$

(v) The probability that a person meeting with an accident and he is a truck driver is

$(a)\frac{3}{20}$ $(b)\frac{45}{52}$ $(c)\frac{2}{52}$ $(d)\frac{1}{100}$

18. Shamshad Ali buys a scooler for ₹ 22000 . He pays ₹ 4000 cash and agree to pay the balance in annual instalments of ₹ 1000 plus 10% interest on the unpaid amount.

Contd...3

On the basis of the above information answer the following questions:

(i) Interest paid by Ali on 1st instalment ?

(a)₹1600 (b)₹1700 (c) ₹1800 (d) *None of these*

(ii) Interest paid by Ali on 2nd instalment ?

(a)₹1600 (b)₹1700 (c)₹1800 (d) *None of these*

(iii) Interest paid by Ali on 3rd instalment ?

(a)₹1600 (b)₹1700 (c)₹1800 (d) *None of these*

(iv) Total interest paid by Ali is

(a)₹ 17100 (b)₹22000 (c)₹39100 (d) *None of these*

(v) How much will scooter cost him ?

(a)₹17100 (b)₹22000 (c)39100 (d) *None of these*

PART - B

SECTION - III

19. If $\frac{\log a}{b-c} = \frac{\log b}{c-a} = \frac{\log c}{a-b}$, *prove that* $a^a . b^b . c^c = 1$

20. *Find the domain and range of the function* $f(x) = \sqrt{16 - x^2}$

21. For any statements p, q find the truth table $(\sim p \vee q) \vee (p \wedge \sim q)$

22. *Find* $\frac{dy}{dx}$, *when* $x = \frac{1-t^2}{1+t^2}$ and $y = \frac{2t}{1+t^2}$

23. Events E and F are such that $P(E) = \frac{1}{2}$, $P(F) = \frac{7}{12}$ *and* $P(\text{not } E \text{ or not } F) = \frac{1}{4}$. *State whether E and F are* independent.

24. Find the mean deviation from the mean for the data : 6, 7, 10, 12, 13, 4, 8, 20

OR

Find the mean deviation from the median for the data : 22, 24, 30, 27, 29, 31, 25, 28, 41, 42.

25. Find the compound interest at the rate of 10 % *per annum for four years on the principal* which in four years at the rate of 4 % *per annum gives* ₹ 1600 *as simple interest.*

26. Find the equations of the lines which cut off intercepts on the axes whose sum and product are 1 and -6 respectively.

OR

Find the values of k for which the line

$(k - 3)x - (4 - k^2)y + k^2 - 7k + 6 = 0$ *is*

(i) *parallel to the* $y-$*axis* (ii) *passing through the origin.*

27. Find the equation of the circle concentric with the circle $2x^2 + 2y^2 + 8x + 10y - 39 = 0$ and having its area equal to 16 π *square units.*

28. Three numbers are in G. P. whose sum is 70. If the extremes be each multiplied by 4 and the means by 5 , they will be in A.P. Find the numbers.

OR

Find the sum of the series : $5 + 55 + 555 + \cdots$ *to n terms.*

Contd...4

SECTION - IV

29. Find the amount of regular annuity of ₹ 5000 payable at the end of each year for 3 years at 10 % per annum compounded annually.

OR

A bank pays 8 % interest per annum compounded half-yearly. What equal amount should be deposited at the end of each half year for $1\frac{1}{2}$ years to get an amount of ₹ 2000 at the end of 18 months ?

30. *Find* $Cov(X, Y)$ *between variates* X *and* Y *from the folloing data* :
$\sum x_i = 100$, $\sum y_i = 140$, $\sum (x_i - 10)(y_i - 15) = 60$, $n = 10$.

31. Bag *I contains 3 black and 2 white balls, Bag II contains 2 black and 4 white balls. A bag and a ball is selected* at random. Determine the probability of selecting a black ball.

OR

Three urns contain 6 red, 4 black, 4 red, 6 black and 5 red 5 black balls respectively. One of the urns is selected at random and a ball is drawn from it. If the ball drawn is red, find the probability that it is drawn from the first urn.

32. Discuss the continuity of the function at x = $\frac{1}{2}$ *where*

$$f(x) = \begin{cases} 3x - \frac{1}{2}, & if\ 0 \le x < \frac{1}{2} \\ 1, & if\ x = \frac{1}{2} \\ \frac{3}{2} - x, & if\ \frac{1}{2} < x \le 1 \end{cases}$$

33. Write the converse, opposite and contrapositive of the statement :
If two lines are parallel, then they do not intersect in the same plane.

34. Let S be the sum, P be the product and R be the sum of reciprocals of n terms of a G. P. Prove that $P^2 R^n = S^n$.

35. Prove that $n_{C_r} + n_{C_{r-1}} = n + 1_{C_r}$

SECTION - V

36. Using logarithmic tables, find the value of $\frac{(25.36)^2 \times 0.4569}{847.5}$.

OR

Using logarithmic tables, find the value of $\frac{(6.45)^3 \times (0.00034)^{\frac{1}{3}} \times (981.4)}{(9.37)^2 \times (8.93)^{\frac{1}{4}} \times (0.0617)}$

37. Compute lower and upper quartiles for the following data

Marks Group	5 - 10	10 - 15	15 - 20	20 – 25	25 -30	30 – 35	35 - 40	40 - 45
No. of students	5	6	15	10	5	4	2	1

OR

Compute D_3 *and* D_7 for the following frequency distribution :

Marks Group	0 - 10	10 - 20	20 - 30	30 – 40	40 -50	50 – 60	60 - 70	70 - 80
No. of students	3	10	17	7	6	4	2	1

38. If a person wants to accumulate ₹ 50000 by making equal payments at the end of each quarter for the next 5 years. What will be the size of these investments if money is worth 6 % converted quarterly?

OR

To save for a child's education, a family decides to invest ₹ 3000 at the end of each 6-months period in a fund paying 8 % per year compounded semi-annually. Find the amount of the investment at the end of 18 years.

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020-21
SUBJECT – COMPUTER SCIENCE

Class : XI
Date : 17.03.2021

Max. Marks : 70
Time : 3 Hrs.

Q1. Answer any 15 objective questions from 1 to 20. **[15]**

1. Flash memory is a type of .....memory.
   a. Primary b. RAM c. secondary d. all of these
2. Operating system is an example of
   a. Application software b. System software c. Utility program d. none
3. Component of CPU which is responsible for comparing the content of two pieces of data is ..... .
   a. ALU b. CPU c. Memory d. Register
4. ASCII code is a 7 bit code for .....
   a. Letters b. numbers c. other symbols d. all of these
5. Octal equivalent of 111 010 is ....
   a. 81 b. 72 c. 71 d. 82
6. Which of the following is/or called Universal logic gates?
   a. OR and NOR b. OR and XOR c. NAND and NOT d. NAND and NOR
7. In Boolean Algebra (x+y).(x+z) = ?
   a. x+y.z b. x.y.z c. xy+z d. none
8. What is the value of the expression 10+3**3*2?
   a. 28 b. 739 c. 829 d. 64
9. What will be the result of the expression 15 and 10 ?
   a. 5 b. 1 c. 20 d. 0
10. Function range(3) is equivalent will yield an iterable sequence like
    a. [0,1,2] b. [0,1,2,3] c. [1,2,3] d. [9,2]
11. Which of the following functions will return a list containing all words of the string?
    a. find() b. index() c. partition() d. split()
12. To find the last element of the list namely 'smiles' in python, ... will be used.
    a. smile[0] b. smile[-1] c. smile[pos] d. smile[:-1]
13. Which of the following function will return the total number of characters in a string ?
    a. count() b. index() c. len() d. all of these
14. Which of the following function can delete an element from list , if value is given?
    a. pop() b. remove() c. del() d. all of these

Contd...2

15. What is the output of the following code ?
    T = (10,20,30,40,50,60,70)
    print(t[5:-1])
    a. Blank output b. (10,20,30,40,50) c. (10,30,50,70) d. None

16. Which of the following will create a single element tuple?
    a. (1,) b. (1) c. ([1]) d. tuple([1])

17. It is a small text file on the user's computer where visited websites store own information about the user.
    a. Spam b. cookies c. Spyware d. adware

18. To protect yourself from computer hackers, you should turn on a..... .
    a. Script b. Firewall c. VLC d. Keylogger

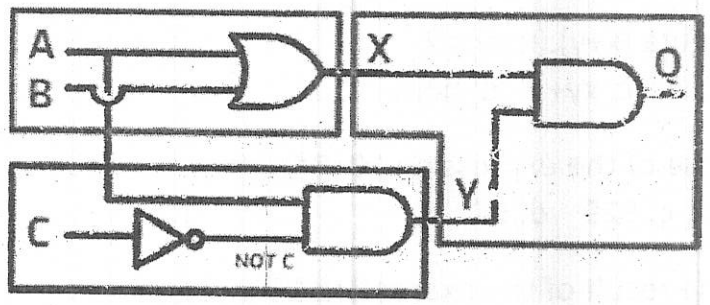
19. Stealing someone else's intellectual work and representing it as own, is called.....
    a. Intellectual steal b. Pluckism c. Plagiarism d. Theft

20. Quick Heal is an example of ....
    a. Photo editing software b. Virus c. Antivirus d. Game

Q2. (a) Find the Binary equivalent of decimal number 235. [1]

(b) Express Hexadecimal number AFD as binary number. [1]

(c) Write the output Q of the given logic circuit diagram. [1]



(d) Compare RAM and ROM. (any four points) [1]

OR

Differentiate between Source code and Object code.

(e) What is Cache memory? How is it useful? [1]

Give the full forms: EEPROM, DVD

Q3. (a) Write a program to find the area of a triangle if three sides are given by the user.

OR

Write a program to calculate the area and circumference of a circle if radius is given by the user. [2]

(b) Write a program to count the number of each vowel in the string entered by the user. [2]

Contd...3

(c) Write Python code to print the given output using var NAME: [2]

NAME = "SHRUTI"

Output:

S
SH
SHR
SHRU
SHRUT
SHRUTI

(d) Assume sent = "Today is Friday and He will surely come". Write Python code to print each word on a separate line. [2]

(e) Write a Python code to print the given output using nested while loops. [2]

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

Q4. (a) What is the difference between pop() and remove() using with list? Give a suitable example. [2]

(b) A list NUM contains the following elements:

3,21,5,6,14,8 14, 3

Write a program to swap the content with the next value divisible by 7 so that resultant array looks like:

3,5,21,6,8,14,3,14 [2]

OR

Write a program to find the lowest and highest numbers stored in the array DATA.

(c) Write the output of the following Python code: [2]

```
my_list = ['p','r','o','g','r','a','m']
print(my_list[2:5])
print(my_list[:-5])
print(my_list[5:])
print(my_list[:])
```

(d) Find the errors in the given program. Rewrite the correct code and underline each correction. [2]

```
x= int("Enter value of x:")
for in range [0,10]:
 if x=y
print( x + y)
else
print( x-y)
```

(e) Explain the use of append() and extend() functions of List data type. [2]

Contd...4

Q5. (a) Explain the use of count() and sorted() functions used with Tuple. Give a suitable example. [2]

(b) Write a program to check if a Tuple contain any duplicate element. [3]

OR

Write a program to find the age of any student if the name is entered by the user. Assume that the data is stored in the Tuple format as shown below:

student = (('Shreya', 15), ('Kunal',17), ('Utkarsh',18), ('Nidhi', 17))

(c) How unpacking is done in the Tuple? Give example. [2]

(d) Write the output of the given program: [1]

```
T = (2e-04, True, False, 8, 1.001, True)

val = 0
for x in T:
    val += int(x)
print(val)
```

(f) How Tuple is different from List? [2]

Q6. (a) Explain the use of get() function used with Dictionary. [2]

(b) Write a program to display name of all the students whose percentage is 75 and above. (use for loop)

DATA = {'Ramesh':90, 'Kapil':80, 'Anjali':45, 'Nidhi': 65} [3]

(c) How update() works in Dictionary? Explain with example. [2]

(d) Write a program to store name and house of any five students in a dictionary STUDENT. Data will be taken as input. [3]

OR

Write a program to store name, and marks of three test in the dictionary for 5 students then print the name and total_test_marks of all the students.

Q7 (a) Describe the following :

Cyber bullying , Stalking [2]

(b) What do you mean by Social Media? Explain. [2]

(c) Suggest any four solutions to avoid Phishing or Pharming attack. [2]

OR

How to protect computer system from Virus? Suggest any four methods.

(d) What is online fraud? [2]

(f) What do you mean by Active and Passive footprint? Explain [2]

OR

Write any four benefits of e-Waste recycling.

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020-21
SUBJECT – ECONOMICS

Class : XI
Date : 17.03.2021

Max. Marks : 80
Time : 3 Hrs.

GENERAL INSTRUCTION-

- All questions in the section are compulsory.
- Question numbers 1-10 and 18-27 are to be answered in one word or one sentence each.
- Question numbers 11-12 and 28-29 should be answered in 60 to 80 words.
- Question numbers 13-15 and 30-32 should be answered in 80 to 100 words.
- Question numbers 16-17 and 33-34 should be answered in 120 -150 words.

SECTION A- STATISTICS

1. Statistics is the study of.....facts- **(1)**
   (a) Quantitative (b) Qualitative (c) Aggregate (d) both a & b
2. Indirect oral investigation method suffers from- **(1)**
   (a) Biasness (b) Doubtful conclusions (c) Inaccuracy (d) All the above
3. Why do we prefer classified data over raw data? **(1)**

   OR

   Name the types of statistical series.
4. Captions is the title given to- **(1)**
   (a) Column (b) rows (c) headnotes (d) stubs
5. Bar diagram is a – **(1)**
   (a) Two dimensional (b) One dimensional (c) Three dimensional (d) None
6. Define ogive. **(1)**
7. Data represented through a histogram can help in finding graphically the- **(1)**
   (a) Mean (b) Mode (c) Median (d) All the above
8. The single value which represents the entire universe is called- **(1)**
   (a) Index number (b) Central tendency (c) Range (d) Histogram
9. Give any two uses of Lorenz curve. **(1)**
10. Give the ranges of various degrees of correlation. **(1)**
11. Define questionnaire. Write the qualities of good questionnaire. **(1+2=3)**
12. What are the importance requisites of a good classification? (Any three) **(3)**

    OR

    Define Stratified sampling. Write two merits and two demerits of it.
13. Calculate arithmetic mean from the following data- **(4)**

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No of students	5	10	25	30	20	10

14. Define index number. Explain any three importance of it. **(4)**
15. Find out lower and upper quartile for following- **(4)**

Income	10	20	30	40
No. of person	2	4	10	4

OR

Calculate mode using grouping method for the following-

C I	0-5	5-10	10-15	15-20	20-25	25-30	30-35
f	1	2	10	4	10	7	6

16. Define correlation. Find coefficient of correlation for the following- **(6)**

X-	10	20	30	40	50
Y-	12	14	16	18	20

OR

How do we use scatter diagram to explain perfect positive or perfect negative correlation? Give example.

Contd...2

17. Find the standard deviation from the following- (6)

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	10	15	10	10	5

SECTION-B (MICROECONOMICS)

18. Opportunity cost arises- (1)
    (a) When there is only course of action
    (b) when there are two or more alternative courses of action
    (c) Both a and c
    (d) Neither a nor c
19. Suppose a consumers preferences are monotonic. What can you say about his preference ranking over the bundles (10, 10), (10, 9) and (9, 9). (1)
20. Expansion in demand is caused due to..... (1)

    OR

    Differentiate between increase in demand and extension in demand.
21. Differentiate between law of demand and price elasticity of demand. (1)
22. Both AP and MP curves are generally- (1)
    (a) U-shaped (b) Rising (c) Inversely U shaped (d) Falling
23. Calculate TFC, if AC and AVC are ₹ 22 and ₹ 18 respectively, at output of 10 units. (1)
24. Which one of the following is also know fixed cost- (1)
    (a) Supplementary cost (b) Prime cost (c) Direct cost (d) Avoidable cost
25. In case of perfect market, price is determined at- (1)
    (a) Equilibrium price of the firm (b) Equilibrium price of Industry
    (c) Between MR and MC (d) None
26. If increase in demand is greater than the increase in supply, then the equilibrium price-(1)
    (a) Decrease (b) Increase (c) Does not change at all (d) cannot be determined
27. Suppose consumers taste shifts in favor of apple. As a result, equilibrium quantity will..... and equilibrium price will..... (1)
    (a) Increase, decrease (b) Decrease, increase
    (c) Increase, increase (d) Decrease, decrease
28. Explain the central problems of what to produce with example. (3)

    OR

    Define opportunity cost. Harish earns ₹ 10 lakhs per year from his business. He gets an offer from a company to work at a salary of ₹ 8, 40,000 per year. Determine opportunity cost of Harish.
29. Define perfect competition. Explain any two features of it. (3)
30. Discuss the effect of nature of commodity and availability of substitute on elasticity of demand. (4)
31. Define cost. Discuss the nature of total variable cost. Use diagram. (4)
32. Explain the situation of excess demand using diagram. What will be its effect on price? (4)

    OR

    Explain the chain effects on equilibrium price and quantity when supply decreases.
33. (a) A consumer wants to consume two goods. Good A is priced at ₹ 2 per unit and Good B at ₹ 4 per unit. The income of the consumer is fixed at ₹ 20. On the basis of this information answer the following- (3)
    (a) Find out the bundles which cost exactly ₹ 20.
    (b) Write down the algebraic expression of budget line.
    (c) How much units of Good A can be purchased if entire income is spent for it.

    (b) Explain normal good and inferior good with example. (3)
34. Explain various revenue concepts. What changes should take place in total revenue so that (i) Marginal revenue is positive and constant and
    (ii) Marginal revenue is positive and falling. (6)

    OR

    Explain Law of variable proportion through behavior of both total product and Marginal product. Use diagram. (6)

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020-21
SUBJECT – GEOGRAPHY

Class : XI
Date : 26.03.2021

Max. Marks : 70
Time : 3 Hrs.

General Instructions :

(i) All questions are compulsory.
(ii) Marks allotted for each questions is marked against them.
(iii) Maps should be attached within the answer script.

Q.01 What are different types of social forestry? **(1)**

Q.02 What is biogeochemical cycle? **(1)**

Q.03 What is the difference between tornado and thunderstorm? **(1)**

Q.04 What are different branches of geography based on systematic approach? **(1)**

Q.05 While the sun rises and sets in Kohima than Delhi, why do the watches at both the places show same time? **(1)**

Q.06 What is difference between mass movement and weathering? **(1)**

Q.07 What is a mist? **(1)**

Q.08 What is subduction zone? **(1)**

Q.09 What is watershed? **(1)**

Q.10 What is the catchment area of River Ganga? **(1)**

Q.11 Discuss carbon cycle. **(3)**

Q.12 What is an Airmass? What are its types? **(3)**

Q.13 Mention the division of ocean floor. **(3)**

Q.14 How soil is degraded. Give 3 points other than deforestation. **(3)**

Q.15 What is significance of tides and currents? Give 3 points each. **(3)**

Q.16 Discuss different levels of biodiversity. **(3)**

Q.17 What are different classes of mass movement? Elaborate. **(3)**

Q.18 What is the extent of usability of river water? **(3)**

Q.19 What are different types of plate boundaries? **(3)**

Q.20 Discuss the river regime of R. Godavari. **(3)**

Q.21 Write a note on Evolution of Himalayan drainage system. **(5)**

Q.22 What is the difference between tropical cyclone and extra tropical cyclone? **(5)**

Q.23 (i) On the given map of world, identify the features marked A, B, C, D & E. **(5)**

(ii) On the political map of India, Locate and label the following : **(5)**

(a) Godavari River

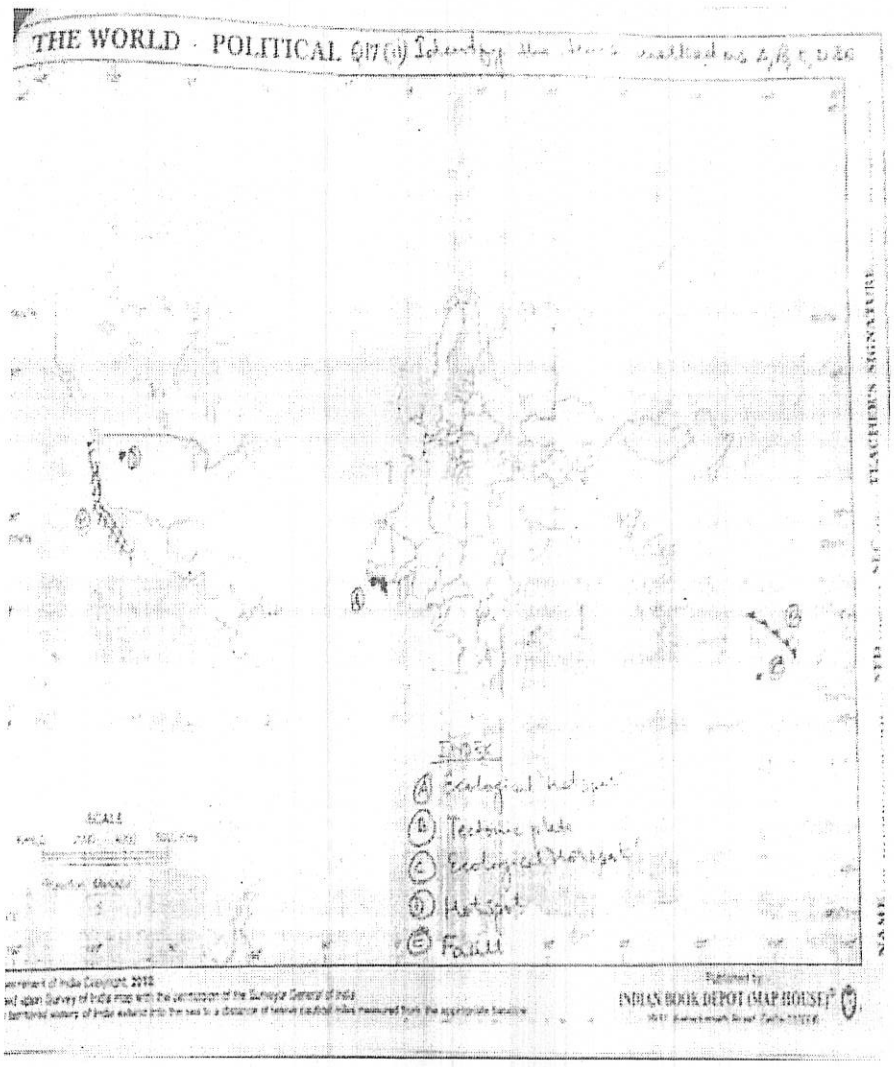
(b) Laterite soil in NE India

(c) Simplipal bioreserve

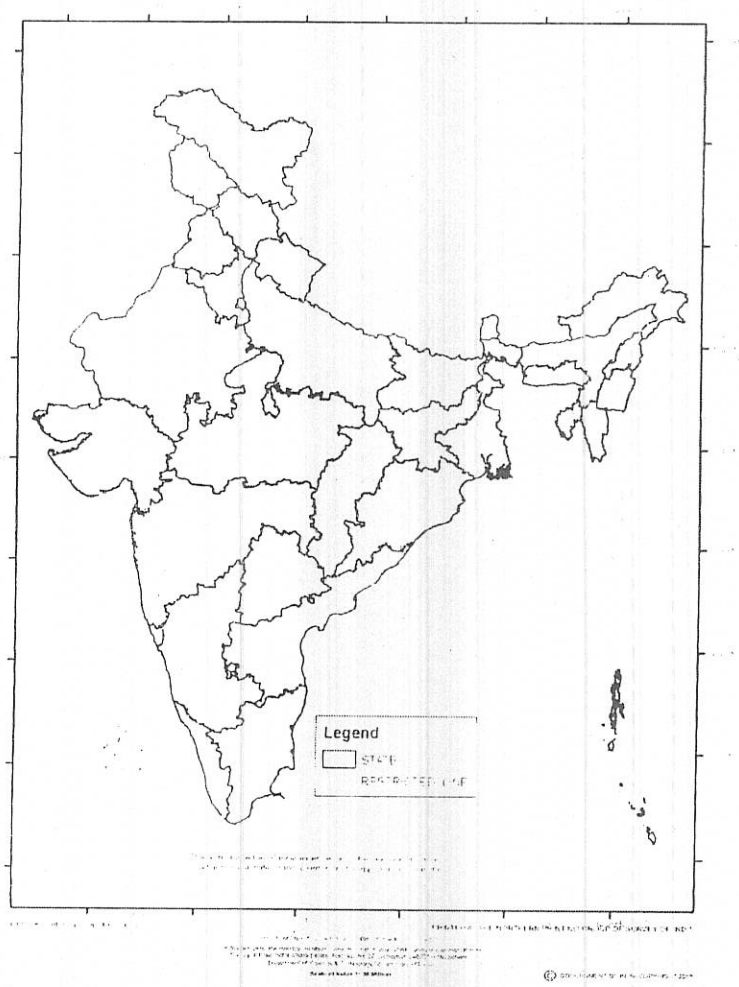
(d) Littoral & Swamp forest

(e) Capital of Mizoram

Contd...2



ANNEXURE 'A'



Q.24 Running water is most important and dominating geomorphic agent in shaping the earth's surface in humid as well as in arid climate. Explain. **(5)**

Q.25 What is seafloor spreading? How earthquake is measured? **(5)**

DELHI PUBLIC SCHOOL, BHILAI
ANNUAL EXAMINATION – 2020–21
SUBJECT – HOME SCIENCE

Class : XI **Max. Marks : 70**
Date : 26.03.2021 **Time : 3 Hrs.**

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.**
   Section A has question no.1 to 14 (objective type questions) and are of 1 mark each.
   Section B has question no. 15 to 21 (case study based multiple choice questions) and are of 1 mark each.
   Section C has question no.22 to 27 of 2 marks each, question no.28 and 29 of 3 marks each, question no.30 to 33 of 4 marks each and question no.34 to 36 of 5 marks each.

SECTION A (OBJECTIVE TYPE QUESTIONS)

Q1. The word communication stems from the Latin word_____ meaning common. 1

Q2. The science of food and nutrients and their action on our health is called _____. 1

Q3. Short length textile fibres are called as _____and long length textile fibres are called as _____. 1

Q4. _____ located on banks of Godavari River near Aurangabad in Maharashtra, is one of the oldest cities in Deccan region which is famous for special silk sarees with gold inlay weaving for borders and motifs. 1

Q5. Pochampalli and Chirala in Andhra Pradesh have the tradition of production of cotton ikat fabrics called_____. 1

Q6. Name any two types of modern communication technologies. 1

Q7. Name two types of puppetry forms. 1

Q8. Name two rural employment generation schemes. 1

Q9. Name the embroidery of Bengal which is done on a base prepared by 3-4 layers of old cotton sarees or dhotis. 1

Q10. Define animism. 1

Q11. What is work? 1

Q12. What is the advantage of feeding colostrum to the new born babies? 1

Q13. Name the most common stiffening agents. 1

SECTION B - CASE STUDY BASED QUESTIONS

	Children grow continuously and so their nutritional needs depend on their rate of growth, body weight, and on how effectively the nutrients are utilized at each stage of their development. Since physical and mental development takes place very rapidly in children, nutritional deficiency at this stage can result in lifelong impairments and disabilities.	
Q.14	Which vaccine is given to the child soon after birth? (a) DPT (b) OPV (c) MMR (d) BCG	1
Q.15	Inclusion of other foods to the infant's diet in addition to breast milk is known as (a) Complementary feeding (b) Supplementary feeding (c) Supplementation (d) Nutritional care	1

Contd...2

Q.16	WHO recommends exclusive breast feeding for _____ months. (a) Three (b) Six (c) Eight (d) Twelve	1
Q.17	In infants _____ is needed for rapid skeletal and muscular growth. (a) Iron (b) Calcium (c) Proteins (d) Vitamin A	1
Q.18	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. It therefore becomes very important that these characteristics are retained for the expected life of the material. _____is a grease solvent which is used in removing grease stains. (a) Ammonia (b) Methylated spirit (c) Acetic acid (d) Bran	1
Q.19	The movement of water particles which helps to remove the non-greasy dirt from the fabric is called _____ (a) Pedesis (b) Dry cleaning (c) Suction washing (d) Friction washing	1
Q.20	When cleaning is done by solvents or absorbents it is called____ (a) Machine washing (b) Friction washing (c) Finishing (d) Dry cleaning	1
Q.21	_____is an example of animal stain. (a) Rust (b) Blood (c) Tea (d) butter	1

SECTION C

Q22. What do you understand by the term reflexes? Give two examples of reflexes in a neonate. 2

Q23. Define Mental health. 2

Q24. Name the various fields of 'Human Ecology and Family Sciences'. 2

Q25. Inter-personal communication is the most effective and ideal type of communication. Give two reasons. 2

Q26. Name four macronutrients. 2

Q27. Briefly explain the types of income. 2

Q28. Enumerate the properties of wool. 3

Q29. What do you understand by hypothetico-deductive reasoning? 3

Q30. Briefly explain the characteristics of resources. 4

Q31. What are the tools in time management? 4

Q32. What should be the features of clothes for children with special needs? 4

Q33. Briefly explain any six benefits of exercise in adulthood. Mention the three broad categories of exercises. 4

Q34. Briefly explain the steps in making a budget. 5

Q35. Enumerate any five principles of Extension education. 5

Q36. During middle childhood, children's self-evaluation becomes more complex. Briefly explain the five key changes that characterize this increasing complexity. 5

DELHI PUBLIC SCHOOL, BHILAI

ANNUAL EXAMINATION – 2020–21

SUBJECT – INFORMATICS PRACTICES

Class : XI **Max. Marks : 70**
Date : 26.03.2021 **Time : 3 Hrs.**

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections : Section – I and Section II.
   Section – I is short answer questions, to be answered in one word or one line.
   Section – II has two case studies questions. Each case study has 4 case-based sub parts.
   An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
   (a) Section-I is short answer questions of 2 marks each.
   (b) Section-II is long answer questions of 3 marks each.
   (c) Section-III is very long answer questions of 5 marks each.

PART - A

SECTION-I

1. _____number of bits makes 1 nibble. 1

2. Software which controls internal computer operations is known as Utility Software. State True/False. 1

3. The device which works like hard disk but works like flash_____ . 1

4. The memory which is high in speed and available in inside CPU in order to access to data and instructions stored in RAM memory is _____. 1
   a. Cache memory b. Registers c. Buffer d. None of these

5. 5th Generation computers uses _____ technology as one of the main features. 1
   a. Data Capturing b. Artificial Intelligence c. Key-Lock feature d. Virus Protection

6. Which of the following is not a function of an Operating System Software: 1
   a. It acts as an interface between a user and hardware.
   b. It controls and coordinates between various components of software.
   c. Manages date and time services.
   d. None of the above

7. The statement – 1
   print(type(5)) – will give output as –
   a. <class 'int'>
   b. <class 'float'>
   c. String
   d. Integer

8. What output will be generated by the given code – 1
   bool(0)
   a. True
   b. False
   c. 0 (zero)
   d. None of these

9. Most famous example of AI today is "**Social humanoid Robot Sophia**". State True/ False. 1

10. Define the term "Augmented Reality". 1

11. Name two devices in which Natural Language Processing (**NLP**) technique is being used. 1

12. Which one of the following is not a characteristic of "**Big Data**" : 1
    a. It is large in size.
    b. It is in structured format.
    c. It is in audio/video format.
    d. None of these

Contd...2

13. Define " **Web of Things** " 1

14. What output will be produced by the following code – 1
```
print(15//4, 15%4 , 15/4 )
```

15. 1
```
d=[11,20,30]
d.pop(2)
d.insert(2,50)
print(d)
```
The above given code will generate output as (select the best suitable option) -

a. [11,20]
b. [11,2,50,30]
c. [11,20,50]
d. [2,11,30,50]

16. The sort( ) method and sorted( ) functions both can rearrange a list in Reverse order. Statement is True/ False. 1

17. From the given list sort-out the invalid identifier - 1
_no , #no , no2 , no_2

18. No of rows in a relation of database, is known as - 1
a. Degree
b. Cardinality
c. Tuple
d. Relation

SECTION-II

Both the case study based questions (22 & 23) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark.

19. Consider a table **SALESMAN** with the following data: **1X4=4**

SNO	SNAME	SALARY	BONUS	JOIN_DATE
1	ARUNA	20000	8000	2015-02-25
2	NEHA	30000	7000	2017-12-27
3	MANISH	50000	5000	2018-12-28
4	RAJESH	40000	4000	2015-02-14
5	MANOJ	30000	9000	2014-03-05
6	RAMESH	25000	8000	2012-05-15
7	YOGESH	35000	7000	2015-05-28

Give SQL for the following – (any 4)

i. Display only name and bonus of all salesmen
ii. Display name of those salesmen who joined in the year 2015.
iii. Display all salesmen information getting salary more than 20000 and bonus more than 5000.
iv. Display all salesmen information in ascending order of their name.
v. Display name, salary and bonus of those salesmen whose name is ending with letter 'H'

20. Given a Python code snippet, read it carefully and answer the following – (any 4) **1x4=4**

```
for num in range(5,15,3 ):
        print("DPS, BHILAI")
        print("RISALI")
```

i. How many times body of loop will be executed ?
ii. If you want to repeat body of loop only for 2 times then what changes will be required ?
iii. What output will be generated by the code ?
iv. Which identifier/variable is working as control variable of loop ?
v. What is iteration ?

Contd...3

PART - B
SECTION-I

21 What is the function of Memory? What are its measuring units? **2**

22. Define Operating System Software. Name two Popular Operating System Software. **2**

OR

Write one advantage and one disadvantage of Open Source Software over Proprietary software.

23. Write any 2 Characteristics/Features/Pluses of Python Programming Language. **2**

24. Write a program to check whether the given number is even or odd. **2**

25 Give SQL commands to display name of all databases and relations (tables) of your system of activated database. **2**

26 Write two advantages of Database. **2**

OR

Define Primary key and Candidate Key in a RDBMS.

27. Differentiate between CHAR and VARCHAR data types with suitable example of each. **2**

28. Create a table named " **UNIFORM**" as given below structure – **2**

Name of Column	Uniform_ID	Size	Fabric	Price
Type	Integer	Char (10)	Varchar (10)	Float(7,2)

29. Give SQL command to display structure of a table "**ACTIVITY**". Also give SQL to display all data (records) stored in it. **2**

30. Distinguish DDL and DML commands with suitable example. **2**

SECTION-II

31. Write a Python program that takes three integer numbers and prints the largest of these. **3**

32. Give Python code to display all divisors (factors) of a given no. **3**

OR

Write a program to print a multiplication table (multiples) of a given integer number.

33. The **Doc_Name** Column of a table **Hospital** is given below: **3**

Doc_Name
Avinash
Mahesh
Vinayak
Deepak
Sanjeev

Based on the information, find the output of the following queries:

i. Select Doc_Name from Hospital where Doc_Name like "%v";

ii. Select Doc_Name from Hospital where Doc_Name like "_e%";

iii. Select Doc_Name from Hospital order by Doc_Name desc;

Contd...4

SECTION-III

35. Study the table given below and give SQL for the following : **1x5=5**

TABLE: EXAM

SNO	NAME	STIPEND	SUBJECT	AVERAGE	DIVISION
1	KARAN	400	IP	68	FIRST
2	AMAN	680	MATH	72	FIRST
3	JAVED	500	ACCOUNTS	67	FIRST
4	BISHAKH	200	IP	55	SECOND
5	SUGANDHA	400	ENGLISH	35	THIRD
6	SUPARNA	550	GEOGRAPHY	45	THIRD

a. To list the names of those students, who have obtained Division "FIRST"
b. To display all student's NAME, SUBJECT and Average marks.
c. To display name of students, who have either ACCOUNTS or IP as subject.
d. To insert a new row in the table EXAM:
   i. 6,"Mohan",500,"ENGLISH",73,"Second"
e. In the above given table mention degree and cardinality of the table "EXAM"

36. Given the following **Sports** Relation:Write output for the given SQL statements : **1x5=5**

Table: Sports

No	Sport_Item _Name	Cost	Quantity	DOP
1	Football	900	9	2006-05-21
2	HockeyStick	1500	3	2007-05-21
3	Net	1800	1	Null
4	BasketBall	2100	2	2006-06-13
5	Bat	8000	1	2009-06-13
6	TennisBall	500	5	2006-05-21
7	Soccer	2500	2	2010-01-11

(i) Select Sports_Item_Name from Sports where cost >1000 ;
(ii) Select distinct Quantity from Sports;
(iii) Select Sport_ Item_Name, Cost, Quantity from sports where DOP is Null;
(iv) Select *from Sports where cost>5000;
(v) Select Sport_Item_Name from Sports where DOP>'2009-06-13';

37. Write a program to enter your 5 friend's name and their phone number and store them in the dictionary as the key and value pair. Perform the following operations on the dictionary. **1x5=5**

i. Display entire dictionary.
ii. Add a new key value pair (another friend's name and phone number)
iii. Modify phone number of any given friend's name
iv. Display the modified dictionary
v. Display the dictionary in the sorted order of names.

OR

Write a program to input a list and perform the following operations in it :
i. Display the entered list
ii. Replicate it twice
iii. Print it in ascending order
iv. Print it in descending order
v. Display number of elements in the list