DELHI PUBLIC SCHOOL, BHILAI

DATE : 23.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

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

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

Q.1. An arbitrary surface encloses a dipole. What is the electric flux through this surface? (1)

Q.2. When a dielectric material is introduced between the plates of a charged condenser, then electric field between the plates remains constant. **True or false?** (1)

Q.3. The total charge of a body is always integral multiple of basic quantum of charge (e), the property is known as..... (1)

Q.4. The emf of the driving cell used in the main circuit of the potentiometer should be more than the potential difference to be measured. Why? (1)

OR

Why are the connecting resistors in a meter bridge made of thick copper strips?

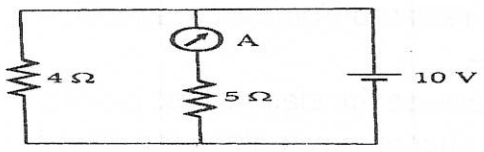
Q.5. Nichrome and copper wires of same length and same radius are connected in series. Current I is passed through them. Which wire gets heated up more? Justify. (1)

OR

A constant voltage is applied between the two ends of a uniform metallic wire. Heat Q is developed in it. If another wire, double the radius and twice the length is used, how much heat will be developed in it?

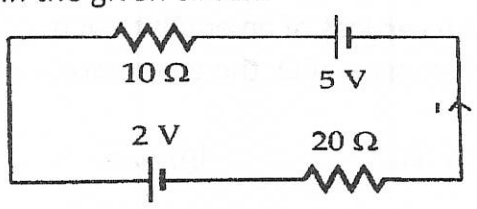
Q.6. Choose the correct alternative: Alloys usually have much (**lower/higher**) temperature coefficients of resistance than pure metals. (1)

Q.7. In the given diagram, what is the reading of the ammeter when the internal resistance of the battery is zero? (1)



OR

Calculate the current 'I' in the given circuit.



Q.8. The current sensitivity of a moving coil galvanometer is 5 division/mA and voltage sensitivity is 20 division/volt. What is the resistance of the galvanometer? (1)

Q.9. How will the magnetic field intensity B at the centre of a circular coil carrying current change, if the current through the coil is doubled and the radius of the coil is halved? (1)

OR

Electron of mass m and charge q is travelling with a speed v along a circular path of radius r at right angles to a uniform magnetic field of intensity B. What will be the radius of resulting path if the speed of the electron is doubled and the magnetic field is halved?

Contd...2

Q.10 Write the condition under which an electron will move undeflected in the presence of crossed electric and magnetic fields? (1)

OR

A positive charge is moving upward in a magnetic field which is towards north. In which direction the particle will be deflected?

For question numbers 11, 12, 13 and 14, two statements are given-one labeled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is NOT the correct explanation of A c) A is true but R is false d) A is false and R is also false

Q.11 Assertion : In the absence of an external electric field, the dipole moment per unit volume of a polar dielectric is zero. (1)

Reason : The dipoles of a polar dielectric are randomly oriented.

Q.12 Assertion : The drift velocity of electrons in a metallic wire decreases when temperature of the wire is increased.

Reason : On increasing temperature, conductivity of metallic wire decreases. (1)

Q.13 Assertion : The magnetic field produced by a current carrying solenoid is independent of its length and cross section area.

Reason : The magnetic field inside the solenoid is zero. (1)

Q.14. Assertion : When radius of a circular loop carrying current is doubled, its magnetic moment becomes four times. (1)

Reason : Magnetic moment depends on area of the loop.

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.

Q.15. **ELECTROSTATIC POTENTIAL ENERGY:** Electrostatic potential energy of a system of point charges is defined as the total amount of work done in bringing the different charges to their respective positions from infinitely large mutual separations. By definition, work done in carrying charge from infinity to any point is-

W= Potential ×Charge

This work is stored in the system of two point charges in the form of electrostatic potential energy U of the system. (4)

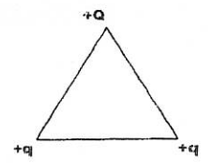
(i) Work done in moving a charge from one point to another inside a uniformly charged conducting sphere is-

(a) Always Zero (b) non- zero (c) may be zero (d) none of these

(ii) A positively charged particle is released from rest in an uniform electric field. The electric potential energy of the charge-

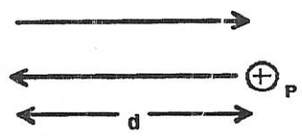
(a) Remains a constant because the electric filed is uniform
(b) Increases because the charge moves along the electric field
(c) decreases because the charge moves along the electric field
(d) decreases because the charge moves opposite to the electric field

(iii) Three charges are placed at the vertices of an equilateral triangle of side l as shown in the figure. For what value of Q, the electrostatic potential energy of the system is zero-



(a) -q (b) q/2 (c) -2q (d)-q/2

(iv) In the figure, proton moves a distance d in a uniform electric field E as shown in the figure. The work done on the proton by electric field is-



(a) Negative (b) positive (c) zero (d) none of these

(v) Two similar positive point charges each of 1μC have been kept in air at 1m distance from each other. What will be the potential energy?

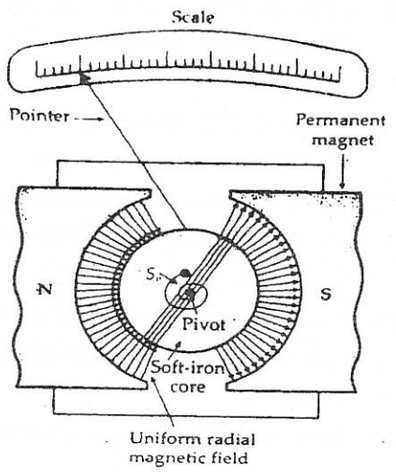
(a) 1J (b) 1eV (c) 9×10^{-3}J (d) zero

Contd...3

Q.16. **MOVING COIL GALVANOMETER:** (4)

Moving coil galvanometer operates on permanent magnet
moving coil (PMMC) mechanism and was designed by the scientist D'arsonval. Moving coil galvanometer are of two type

(i) Suspended coil (ii) Pivoted coil type



Its working is based on the fact that when a current carrying coil is placed in a magnetic field, it experiences a torque. This torque tends to rotate the coil about its axis of suspension in such a way that the magnetic flux passing through the coil is maximum.

(i) A moving coil galvanometer is an instrument which
(a) is used to measure emf
(b) is used to measure potential difference
(c) is used to measure resistance
(d) is a deflection instrument which gives deflection when a current flows through its coil

(ii) To make the field radial in a moving coil galvanometer
(a)number of turns of coil is kept small (b) magnet is taken in the form of horse shoe
(c) poles are of very strong magnets (d) poles are cylindrically cut

(iii) The deflection in a moving coil galvanometer is-
(a) directly proportional to torsional constant of spring
(b) directly proportional to the number of turns in the coil
(c) inversely proportional to the area of the coil
(d) inversely proportional to the current in the coil

(iv) In a moving coil galvanometer, having a coil of N turns of area A and carrying current I is placed in a radial field strength B. The torque acting on the coil is-
(a) NA^2B^2I (b) $NABI^2$ (c) N^2ABI (d) $NABI$

(v) To increase the current sensitivity of a moving coil galvanometer, we should decrease-
(a) strength of magnet (b) torsional constant of spring
(c) number of turns of the coil (d) area of coil

SECTION-C

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

Q.17. Plot a graph showing the variation of Coulomb's force (F) versus $(1/r^2)$, where r is the distance between the two charges of each pair of charges: (1μC,2μC) and (2μC, -3μC). Interpret the graph obtained. **(2)**

Q.18. What do you understand by angle of dip? A magnetic needle free to rotate in a vertical plane parallel to the magnetic meridian has its north tip pointing down at 30^0 with the horizontal. The horizontal component of the earth's magnetic field at the place is known to be 0.35G. Determine magnitude of the earth's magnetic field at that place. **(2)**

OR

What do you understand by angle of declination? At a certain location in Africa, a compass points 12^0 west of the geographic north. The north tip of the magnetic needle of a dip circle placed in the plane of the magnetic meridian points 60^0 above the horizontal. The horizontal component of the earth's magnetic field at the place is measured to be 0.16G. Determine magnitude of the earth's magnetic field at that location.

Q.19. If $C_1 = 20\mu F$, $C_2 = 30\mu F$ and $C_3 = 15\mu F$ and the insulated plate of C_1 be at a potential of 90V, one plate of C_3 being earthed. What is the potential difference between the plates of C_2, three capacitors being connected in series? **(2)**

Contd...4

Q.20. (a) Write the expression for the magnetic force $\vec{F}$ acting on a charged particle q moving with velocity $\vec{v}$ in the presence of the magnetic field $\vec{B}$ in a vector form.

(b) Show that no work is done by this force. **(2)**

Q.21. A cell of emf ξ and internal resistance 'r' is connected across a variable load resistor R. Draw the plots of the terminal voltage V versus (i) R and (ii) the current I. **(2)**

OR

Draw a plot showing the variation of resistivity of a (i) copper and (ii) germanium with the increase in temperature.

Q.22. What do you understand by equipotential surfaces? Draw the equipotential surface corresponding to a field that uniformly decreases in magnitude but remains in a constant Y direction. **(2)**

Q.23. A 3.0 cm wire carrying a current of 10A is placed inside a solenoid perpendicular to its axis. The magnetic field inside the solenoid is given to be 0.27T. Calculate the magnetic force on the wire? **(2)**

Q.24. Two electric bulbs are rated at 220V-100W and 220V-60W. Which one of these has greater resistance? Why? **(2)**

Q.25. A galvanometer has a resistance of 15Ω and the meter shows full scale deflection for a current of 4mA. How will you convert the meter into an ammeter of range 0 to 6A? **(2)**

OR

A galvanometer can be converted into a voltmeter of certain range by connecting a resistance of 980Ω in series with it. When the resistance is 470Ω connected in series, the range is halved. Find the resistance of a voltmeter.

SECTION-D

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

Q.26. (a) Define electric dipole moment.

(b) Derive an expression for the electric field at any point on the equatorial line of an electric dipole. **(3)**

OR

(a) Derive an expression for the torque acting on an electric dipole placed in a uniform electric field.

(b) What happens when an electric dipole is held in a non-uniform electric field?

Q.27. Derive an expression for the force per unit length between two infinitely long straight parallel current carrying wires. Hence define SI unit of current. **(3)**

OR

Deduce an expression for the magnetic dipole moment of an electron revolving around a nucleus. Hence define Bohr magneton and write its value.

Q.28. (a) What do you understand by drift speed of free electrons?

(b) A potential difference V is applied to a conductor of length L. How is the drift speed affected when V is doubled and L is halved? **(3)**

OR

(a) Deduce the relation between current density and potential difference across a current carrying conductor of length l, area of cross section A and number density of free electrons n.

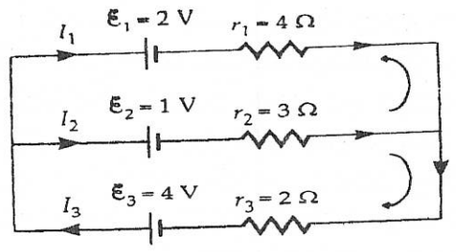
(b) How does the current density in a conductor vary with temperature?

Q.29. (a) Write the principle of working of meter bridge.

(b) Draw the circuit diagram for meter bridge to find unknown resistance.

(c) Why should we get the null point in the middle of the meter bridge wire? **(3)**

Q.30. Use Kirchhoff's rules to find the values of currents I_1, I_2 and I_3 in the circuit shown below. **(3)**



Contd...5

SECTION-E

Q.31. (a) state the principle of potentiometer.

(b) With the help of circuit diagram, explain how can a potentiometer be used to find the internal resistance of primary cell.

(c) A 3.0 V potentiometer is used for the determination of internal resistance of a 2 V cell. The balance point of the cell in open circuit is 350 cm. When a resistor of 9Ω is used in the external circuit of the cell, the balance point shifts to 300 cm length of the potentiometer wire. Determine the internal resistance of the cell. **(5)**

OR

(a) What do you understand by emf of the cell?

(b) Two cells of emfs ξ_1 and ξ_2 and internal resistance r_1 and r_2 are connected in parallel. Derive the expressions for the emf and internal resistance of the cell which replace this combination.

(c) two identical cells of emf 1.5V each joined in parallel provide supply to an external circuit consisting of two resistances of 17Ω each joined in parallel. A very high resistance voltmeter reads the terminal voltage of cells to be 1.4V. Calculate the internal resistance of each cell.

Q.32. (a) Define electric flux and write SI unit.

(b) state Gauss's law.Prove that the electric field at a point due to uniformly charged infinite plane sheet is independent of distance from it. **(5)**

OR

(a) Define dielectric strength and give its SI unit

(b) Deduce expression for capacitance of a parallel plate capacitor when a dielectric slab is inserted between its plate of thickness less than plate separation.

Q.33. (a) State Biot-Savart law.

(b) Using Biot-Savat law, find an expression for the magnetic field at the centre of a circular coil of N turns, radius r, carrying current I.

(c) A long wire with a small current element of length 1 cm is placed at the origin and carries a current of 10 A along the x-axis. Find out the magnitude and the direction of the magnetic field due to the element on the Y-axis at a distance 0.5 cm from it. **(5)**

OR

(a) State Ampere's Circuital law.

(b) Using Ampere's Circuital law, Calculate the magnetic field due to an infinitely long wire carrying a current I.

(c) A horizontal overhead powerline carries a current of 90 A in an east to west direction. What is the magnitude and the direction 1.5 m below the line?

DELHI PUBLIC SCHOOL, BHILAI

DATE : 23.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS : XII **SUBJECT – ACCOUNTANCY** **Max. Marks : 80**

General Instruction:

i. This question paper contains two parts A and B.
ii. Part A is compulsory for all.
iii. Part B has two options – Analysis of Financial Statements and Computerized Accounting.
iv. Attempt only one option of Part B.
v. All parts of a question should be attempted at one place.

	PART - A (ACCOUNTING PARTNERSHIP FIRMS)	
1.	X, Y and Z are partners sharing profits and losses in the ratio of 5:3:2. They decide to share the future profits in the ratio of 3:2:1. Workmen compensation reserve appearing in the balance sheet on the date if no information is available for the same will be: (A) Distributed among the partners in old profit-sharing ratio (B) Distributed among the partners in new profit-sharing ratio (C) Distributed among the partners in capital ratio (D) Carried forward to new balance sheet without any adjustment	1
2.	Which of the following items are added to previous year's profits for finding normal profits for valuation of goodwill.? (A) Loss on sale of fixed assets (B) Loss due to fire, earthquake etc. (C) Undervaluation of closing stock (D) All of the above	1
3.	A partnership firm earned divisible profit of ₹ 5,00,000, interest on capital is to be provided to partner is ₹ 3,00,000, interest on loan taken from partner is ₹ 50,000 and profit sharing ratio of partners is 5:3 sequence the following in correct way I. Distribute profits between partners II. Charge interest on loan to Profit and Loss A/c III. Calculate the net profit Transfer to Profit and Loss appropriation A/c IV. Provide interest on capital (A) ii, iii, iv, i (B) iii, ii, iv, I (C) i, ii, iii, iv. (D) ii, iv, iii, i	1
4.	Which one of the following item cannot be recorded in Profit and Loss Appropriation Account? (A) Interest on Capital (B) Manager's Commission (C) Interest on Drawings (D) Partner's Salary	1
5.	A and B are partner's sharing profit equally. A draw regularly ₹4,000 at the end of every month for 6 months. Year ended on 30th September 2020, calculate interest on drawings @ rate 5% p.a. (A) ₹350 (B) ₹450 (C) ₹150 (D) ₹250	1
6.	Which of these is charge against profit? (A) Rent to a partner (B) Salary to a partner (C) Both (a) and (b) (D) None of these	1
7.	A ,Y and Z are partners in 5 : 4 : 1. Z is guaranteed that his share of profit will not be less than ₹ 80,000. Any deficiency will be borne by A and Y in 3 : 2. Firm's profit was ₹ 5,60,000. How much deficiency will be borne by Y ? (A) ₹2,14,400 (B) ₹14,400 (C) ₹2,09,600 (D) ₹9,600	1
8.	X, Y, and Z are partners in the ratio of 4 : 3 : 2. Salary to X ₹15,000 and to Z ₹ 3,000 omitted and profits distributed. For rectification, now X will be credited : (A) ₹15,000 (B) ₹ 1,000 (C) ₹12,000 (D) ₹7,000	1
9.	Match the following with the given information: The profit of last 4 years were 2017-18 ₹ 1,00,000; 2018-19 ₹ 2,00,000; 2019-20 ₹ 3,00000; 2020-21 ₹ 4,00,000. Average Adjusted profit will be (i) Overvaluation of closing stock in 2018-19 is ₹ 10,000 — (a) ₹ 2,52,500 (ii) Undervaluation of closing stock in 2018-19 is ₹ 10,000 but in 2019-20 is correctly recorded — (b) 2,48,750 (iii) Abnormal gain included in 2019-20 is ₹ 10,000 — (c) ₹ 2,47,500 (iv) Sale of furniture (book value ₹10,000) ₹ 15,000 in the year 2019-20 — (d) ₹ 2,50,000 (A) (i)-b; (ii)-c; (iii)-a; (iv)-d (B) (i)-b; (ii)-c; (iii)-d; (iv)-a (C) (i)-d; (ii)-a; (iii)-c; (iv)-b (D) (i)-a; (ii)-d; (iii)-b; (iv)-c	1

Contd...2

10. Assertion (A): Goodwill is the good name or reputation of the business which brings benefit to the business. [1]
Reason (R): It is an intangible asset as it has no physical existence.
(A) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion
(B) Both Assertion and Reason are correct and Reason is not the correct explanation of Assertion.
(C) Assertion is correct, but Reason is not correct.
(D) Assertion is not correct, but Reason is

11. A, B and C are partner sharing profits in the ratio of 1 : 2 : 3. On 1-4-2021 they decided to share the profits equally. On the date there was a credit balance of 1,20,000 in their Profit and Loss Account and a balance of 1,80,000 in General Reserve Account. Instead of closing the General Reserve Account and Profit and Loss Account, it is decided to record an adjustment entry for the same. In the necessary adjustment entry to give effect to the above arrangement: [1]
(A) Dr. A by 50,000; Cr. B by 50,000 (B) Cr. A by 50,000; Dr. B by 50,000
(C) Dr. A by 50,000; Cr. C by 50,000 (D) Cr. A by 50,000; Dr. C by 50,000

12. B and N are partners in a firm sharing profits in the ratio of 3 : 2. They admit S as a partner for l/4th share in the profits. S acquires his share from B and N in the ratio of 2 : 1. The new profit-sharing ratio will be : [1]
(A) 2:1:4 (B) 19:26: 15 (C) 3:2:4 (D) 26 : 19 : 15

13. Assertion :- Assets and Liabilities are revalued on the admission of a new partner. [1]
Reason1 the entire profit and loss belongs to the period prior to Admission
Reason2 To Divide the profit and loss among old partners
(A)only 1 correct
(B) Only 2 is correct
(B) Both 1 and 2 are correct but 1 is proper explanation of Assertion
(D) Both 1 and 2 are correct but 2 is proper explanation of Assertion

14. Sanjana and Sancheta are partners with capital of ₹5,00,000 and ₹4,00,000 respectively, on which they are entitled to interest at 10% p.a. They divide profit in the ratio of 2:1. They take Suyash into partnership with 1/4th share of profit and guaranteed that his share of profits will not be less than ₹2,00,000. Suyash brought ₹3,00,000 as his capital. Any excess profits received by Suyash over his 1/4th share will be borne by Sanjana and Sancheta in the ratio of 4 :1. Profits at the end of the year before allowing interest on capitals amounted to ₹ 7,20,000. Distribute the profits. [3]

15. Suresh and Ramesh were partners in a firm sharing profits in the ratio of 3: 2. Their fixed capitals were: [4]
Suresh ₹ 9,00,000 and Ramesh ₹ 6,00,000. The partnership deed provided the followings:
i) Interest on capital @ 5%p.a.
(ii) ₹ 60,000 p.a. salary to Suresh and salary of ₹2,000 p.m. to Ram.
The profit earned by the firm for the year ended 31-3-2021 was ₹ 2,34,000. The profits were divided equally without providing for above. Pass adjustment entry.

OR

Capital accounts of Advik and Yashika stood at ₹10,00,000 and ₹7,50,000 respectively after adjustment in respect of the drawings and the net profits for the year ended 31st March, 2021. It was subsequently noticed that interest of capital was not allowed and interest on drawings was not charged @ 5% p.a. before distributing the profit. Drawings of the partners were: Advik ₹ 30,000 drawn at the end of each quarter and Yashika ₹ 45,000 at the end of each half year. Profit for the year as adjusted amounted to ₹5,00,000. The partners share profits in the ratio of 3:2.
Pass adjustment entry to rectify the above errors.

16. Dolly, Mamta and Rashmi are partners in a firm sharing profits and losses in the ratio of 2:2:1 and from today onwards, they decided to share future profits and losses equally. What single journal entry shall be passed for following items? [4]
I. General Reserve appearing in the balance sheet at ₹60,000.
II. Goodwill is valued at ₹ 30,000.
III. Revaluation of assets and liabilities show a profit of ₹30,000

17. K and Y were partners in a firm sharing profits in 3 : 2. They admitted Z as a new partner for 1/3rd share in the profits of the firm. Z acquired his share from K and Y in 2 : 3 ratio. Z brought Rs. 80,000 for his capital and Rs. 30,000 for his 1/3rd share as premium. Calculate the new profit-sharing ratio of K, Y and Z and pass necessary journal entries for the above transactions in the books of the firm. [4]

18. Ramesh and Suresh are partners sharing profits in ratio 3: 2. Their Balance Sheet as on 31-3-2021 was as under: [4]

Liabilities		₹	*Assets*	₹
Capitals:	₹		Goodwill	15,000
Ramesh	1,25,000		Machinery	80,000
Suresh	75,000	2,00,000	Investment	95,000
Creditors		55,000	Stock	40,000
General Reserve		10,000	Debtors	25,000
Provident Fund		20,000	Bank	30,000
		2,85,000		2,85,000

To meet requirement of capital they decided to admit their school time friend Tina on 1st April 2021 for 1/5th share which she takes from Ramesh and Suresh equally. She contributed by cheque ₹ 100,000 out of which ₹ 20,000 is for her share of goodwill. Other terms were:

Cont'd...3

i. Half the investment is taken over by old partners in their profit ratio and remaining be valued at ₹ 55,000.
ii. Depreciate Machinery by 10%.
iii. Stock be appreciated by ₹ 4,000.
iv. Liability of Provident Fund was estimated at ₹ 18,000.

Your required to answer the following

A. What is the total gain/loss on revaluation of assets and liabilities
B. What amount of premium for goodwill will be debited/credited to Ramesh and Suresh.
C. What will be the closing balance of Ramesh and Suresh capital a/c.
D. What is the value of the goodwill of the firm?

19. X, Y and Z were partners in a firm having capital of ₹ 1,00,000, ₹ 80,000 and ₹ 60,000 respectively. Their current account balances were: X-₹ 6,000, Y-₹ 5,000 and Z-₹ 2,000 (Dr.). According to partnership deed, the partners were entitled to interest on capital @ 6% p.a. Z was entitled to salary of ₹5,000 p.a. while Y was entitled to commission amounting to ₹ 4,000 p.a. The profits were to be divided as follows: 6

(i) The first ₹ 24,000 in proportion of their capital.
(ii) Remaining profit to be divided equally.
(iii) They drew ₹ 1,000 p.m. each as drawings.

During the year, firm made a profit of Rs. 53,400 before charging any of the above items.
Prepare Profit & Loss Appropriation Account and current account of partners

20. A presents the following Profit and Loss Appropriation Account to his partner B for the year ended 31st March, 2021. 6

Particulars		₹	*Particulars*	₹
To Salary:			By Profit & Loss *A/* c	40,200
A	10,000			
B	8,000	18,000		
To Interest on Capital:				
A	10,000			
B	8,000	18,000		
To Interest on A's Loan @ 12% p.a.		1,200		
To Profit transferred to Capital *A/* c :				
A-3/4	12,000			
B-1/4	4,000	16,000		
		40,200		40,200

B feels that he is not fairly treated by A. There is no partnership deed. You are required to prepare Profit and Loss Appropriation Account as per the provisions of Partnership Act, 1932.

21. A and B share profits and losses in the ratio 3: 2. They admitted C as partner for 1/4 share of profit. He contributed Rs. 30,000 as capital and Rs. 20,000 for goodwill share. The balance sheet of A and B as on 31st March,2020 was as follows: 8

Liabilities	₹	*Assets*		₹
Creditors	24,000	Cash		7,000
Bills Payable	7,000	Stock		46,000
General Reserve	10,000	Sundry Debtors	25,000	
Capital Accounts:		*Less:* Provision of Bad Debts	2,000	23,000
A	56,000	Furniture		10,000
B	37,000	Plant		18,000
		Building		30,000
	1,34,000			1,34,000

The assets and liabilities of the firm were revalued as under:
(a) Stock at Rs. 40,000, Furniture at Rs. 8,000, Plant at Rs. 15,000 and Building at Rs. 36,000.
(b) Provision for Doubtful Debts is to be maintained at 10% of the Debtors.
(c) A liability of Rs. 1,000 included in creditors was not likely to be claimed.
Pass necessary journal entries.

OR

X and Yare partners in a firm. Their Balance Sheet on 31st March, 2020 is as follows:

Liabilities	₹	*Assets*	₹
Provision for Doubtful Debts	3,000	Cash	10,000
Workmen' Compensation Fund	6,000	Sundry Debtors	70,000
Outstanding Expenses	4,000	Stock	26,000
Creditors	31,000	Fixed Assets	48,000
Capitals:		Profit & Loss *A/* c	6,000
X	58,000		
Y	58,000		
	1,60,000		1,60,000

Z was taken into partnership as from 1st April,2021. Z brought ₹40,000 as his capital. New profit-sharing ratio is 3: 2: 1. Following terms were agreed upon:
(i) Claim on account of workmen's compensation is ₹ 3,000.
(ii) To write off bad debts amounting to ₹ 5,000.

Contd..4

(iii) Creditors are to be paid Rs. 1,000 more and Fixed Assets are valued at ₹ 50,500.
(iv) ₹ 3,000 to be provided for unforeseen liability.
(v) Outstanding expenses be brought down to ₹ 3,500.
(vi) Goodwill is valued at 2 years' purchase of average profit of last three years. Profit of last three years amounted to ₹ 13,000, Rs. 20,000 and Rs. 30,000.
Prepare Revaluation Account & Capital Accounts of Partners.

22. (a) On April1, 2014 an existing firm had assets ₹. 75,000 including cash of ₹ 5,000. The partners' capital accounts showed a balance of Rs. 60,000 and reserves constituted the rest. If the normal rate of return is 10% and the goodwill of the firm is valued at ₹ 24,000 at 4 years' purchase of super profit, find the average profit of the firm. 8

(b) X, Y & Z who are presently sharing profits and losses in the ratio of 2:2:1, decide to share future profits and losses in the ratio of 2:3:5. Give the journal entry to distribute 'Investment Fluctuation Reserve "of ₹ 8,000at the time of change in profit sharing ratio, when Investment (Market Value Rs. 38,000) appears at ₹ 40,000.

OR

Following is the balance sheet of P, Q and R for the year ended 31st March, 2021. Who share profits in the ratio 2 : 2 : 1.

Liabilities		₹	*Assets*	₹
Capitals:			Plant	60,000
P	40,000		Furniture	21,000
Q	40,000		Stock	55,000
R	20,000	1,00,000	Debtors	50,000
Reserves		40,000	B/R	8,000
Creditors		60,000	Bank	6,000
		2,00,000		2,00,000

They decided to share profits equally w.e.f. 1st April, 2021. They further agreed that :

i) Plant be valued at ₹55,000 and stock at ₹ 62,000.
(ii) A provision for doubtful debt on debtors at 5% be created.
(iii) Creditors are estimated at ₹ 62,000.
(iv) Goodwill of firm is valued at ₹ 37,500.

They do not want to record goodwill and also do not wish to alter the reserves however they want to show revised value of asset and liabilities in the books.
Pass journal entries to record the changes and prepare Partners capital account.

PART- B OPTION 1
(ANALYSIS OF FINANCIAL STATEMENTS)

23. Assertion: When financial statements of several years are compared against a chosen base year, it is called Dynamic Analysis. 1
Reason: Horizontal analysis is made to review and analyze the financial statements for a number of years and it is also known as Time Series Analysis.
In the context of the above two statements, which of the following is correct?
Codes:
(A) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
(B) Both Assertion and Reason are correct but Reason is not the correct explanation of A.
(C) Only Reason is correct.
(D) Both Assertion and Reason are wrong.

24. Assertion : Increasing the value of closing inventory increases profit. 1
Reason : Increasing the value of closing inventory reduces cost of goods sold.
In the context of the above two statements, which of the following is correct?
Codes:
(A) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
(B) Both Assertion and Reason are correct but Reason is not the correct explanation of A.
(C) Only Reason is correct.
(D) Both Assertion and Reason are wrong.

25. Current ratio of Adhaar Ltd. is 2.5:1. Accountant wants to maintain it at 2:1. Following options are available. 1
(i) He can repay Bills Payable
(ii) He can purchase goods on credit
(iii) He can take short term loan
Choose the correct option.
(A) Only (i) is correct
(B) Only (ii) is correct
(C) (i) and (iii) both are correct
(D) (ii) and (iii) both are correct

Contd...4

26	**Case Study:** Anand Ltd. has provided the following information on 31st March 2021 Total Assets ₹ 8,00,000;10% Debentures ₹ 2,00,000(Redeemable after 4 years); Long-term Bank Loan ₹ 1,50,000; Long-term Provisions ₹ 50,000; 12% Debentures ₹ 1,40,000(Redeemable with in next 6 months); Trade Payables ₹ 60,000 You are required to answer the following questions (i.e. from 26(i) to 26(iv)on the basis of above information's	
26(i)	Debt to Equity Ratio of the company will be: (A) 2.5:1 (B) 2.7:1 (C) 2:1 (D) 4:1	1
26(ii)	Company issue fresh 7% Debentures of ₹ 1,00,000. Now its Debt Equity Ratio will be: (A) 2:1 (B) 2.5:1 (C) 3:1 (D) 1:1	1
26(iii)	Company issue fresh Equity Shares of ₹ 50,000. Now its Debt Equity Ratio will be: (A) 2.5:1 (B) 1.5:1 (C) 2:1 (D) 1.6:1	1
26(iv)	Old and damaged Furniture costing ₹ 1,30,000 was sold for ₹ 30,000. (A) 4:1 (B) 3:1 (C) 2:1 (D) 1:1	1
27.	What is a contingent liability? Where is it shown in the Balance Sheet? Give an example of contingent liabilities. OR State any three objectives of Financial Statement Analysis?	3
28.	Under which major heading and sub-headings will the following items be shown in the balance sheet of company as per schedule III part I of the companies act 2013: (A) Bonds (B) Premium of Redemption of Debentures (C) Loose Tools (D) Employees Provident Fund Payable.	4
29.	From the following information of Roshan Ltd., Calculate (A) Return on Investment Ratio (B) Total Assets to Debt Ratio. (C) Interest Coverage Ratio. Information: Fixed Assets ₹ 7,50,000; Current Assets ₹ 4,00,000; Current Liabilities ₹ 2,70,000; 12% Debentures ₹ 8,00,000; Net profit after interest and tax 1,20,000 and Rate of income tax 20%. **OR** Calculate gross profit ratio from the following: Cash Revenue from Operation are 1/3rd of total revenue from operations. Cash revenue from operations were ₹ 4, 20,000; Credit purchase are 25% of total purchases, Credit purchases were ₹2,10,000. Opening inventory ₹ 70,000; Closing inventory was ₹35,000, more than the Opening inventory, Carriage ₹ 10,500 Wages ₹ 24,500.	6

G11

DELHI PUBLIC SCHOOL, BHILAI

TIME: 3 hrs. **MID TERM EXAMINATION, 2021** **21.09.21**

CLASS-XII **MATHEMATICS** **M.M.80**

General Instructions:

Read the following instructions very carefully and strictly follow them:

(i) This question paper contains two parts A and B. Each part is compulsory. Part A carries 24 marks and Part B carries 56 marks.

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

(iii) Both Part A and Part B have choices.

PART- A

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

(ii) Section I comprises of 16 very short answers type questions.

(iii) Section II contains 2 case studies. Each case study comprises 5 case-based MCQs. An examinee is to attempt any 4 out of 5 MCQs.

PART- B

(i) It consists of three sections III, IV and V.

(ii) Section III comprises of 10 questions of 2 marks each.

(iii) Section IV contains of 7 questions of 3 marks each.

(iv) Section V comprises of 3 questions of 5 marks each

(v) Internal choice is provided in 3 questions of Section – III, 2 questions of Section – IV and 2 questions of Section –V. You have to attempt only one of the alternatives in all such questions.

PART-A
SECTION – I

1. Let $f: R \to R$ be defined by $(x) = \begin{cases} 2x, & x > 3 \\ x^2, & 1 < x \leq 3 \\ 3x, & x \leq 1 \end{cases}$. Then find $f(-1) + f(2) + f(4)$.
2. Set A has three elements and set B has four elements. The number of injections that can be defined from A to B is_____.
3. Find the principal value of $\sin^{-1}\left(\frac{-\sqrt{3}}{2}\right)$.
4. Let $A = \{1, 2, 3\}$ and consider $R = \{(1,1), (2,2), (3,3), (1,2), (2,3), (1,3)\}$. Is R reflexive and transitive?
5. Find the value of k for which $\begin{bmatrix} 1 & k & 3 \\ 3 & k & -2 \\ 2 & 3 & -4 \end{bmatrix}$ is singular.
6. Construct a 2×2 matrix whose elements are given by $a_{ij} = \frac{(i+2j)^2}{2}$.
7. Find the value of λ so that the points $(5, 5)$, $(\lambda, 1)$ and $(10, 7)$ are collinear.
8. If A is a square matrix of order 3 such that $|Adj\ A| = 64$, then find $|A|$.

OR

If A is a square matrix of order 3, such that $A.(Adj\ A) = 6\ I$, then find $|Adj\ A|$.

9. If A is 3×4 and B is a matrix such that $A'B$ and BA' are both defined. What is the order of matrix B?

OR

If A is a matrix of order $x \times 2$ and B is a matrix of $2 \times y$ and $(AB)'$ is of order 4×3, then find x & y.

10. The function $f(x) = x - [x]$ where $[x]$ denotes the greatest integer function is continuous at _____ only.
11. If $f(x) = |\cos x|$, then $f'\left(\frac{3\pi}{4}\right) =$ _____.
12. If $y = A\,e^{3x} + B\,e^{-3x}$, then find $\frac{d^2y}{dx^2}$ in terms of y.

OR

If $ax^2 + 2hxy + by^2 = 1$, what is $\frac{dy}{dx}$?

13. Find the derivative of $e^{x \log x}$ w.r.t. x.

OR

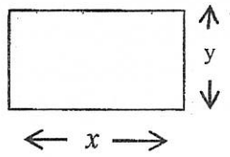
If $y = \log_{10} x$, find $\frac{dy}{dx}$.

14. If $\sqrt{x} + \sqrt{y} = 4$ then find $\frac{dx}{dy}$ at $y = 1$.
15. Differentiate $\sin^{-1}\left(\frac{2^{x+1}}{1+4^x}\right)$ $w.r.t\ x$.
16. Determine the value of k so that the function $f(x) = \begin{cases} \frac{kx}{|x|}, & x < 0 \\ 3, & x \geq 0 \end{cases}$ is continuous at $= 0$.

SECTION – II

CASE STUDY BASED

17. Ram wants to donate a rectangular plot of land for a school in his village. When he was asked to give dimensions of the plot, he told that if its length is decreased by 50 m and breadth is increased by 50 m, then its area will remain same, but if length is decreased by 10 m & breadth is decreased by 20 m, then its area will decrease by 5300 m^2.



Based on the information given above answer any four questions:

(i) The equations in terms of x and y are

(a) $x-y=50, 2x-y=550$ (b) $x-y=50, 2x+y=550$

(c) $x+y=50, 2x+y=550$ (d) $x+y=50, 2x-y=550$

(ii) Which of the following matrix equations is represented by the given informations?

(a) $\begin{bmatrix}1 & -1\\ 2 & 1\end{bmatrix}\begin{bmatrix}x\\ y\end{bmatrix}=\begin{bmatrix}50\\ 550\end{bmatrix}$ (b) $\begin{bmatrix}1 & 1\\ 2 & 1\end{bmatrix}\begin{bmatrix}x\\ y\end{bmatrix}=\begin{bmatrix}50\\ 550\end{bmatrix}$

(c) $\begin{bmatrix}1 & 1\\ 2 & -1\end{bmatrix}\begin{bmatrix}x\\ y\end{bmatrix}=\begin{bmatrix}50\\ 550\end{bmatrix}$ (d) $\begin{bmatrix}1 & 1\\ 2 & 1\end{bmatrix}\begin{bmatrix}x\\ y\end{bmatrix}=\begin{bmatrix}-50\\ -550\end{bmatrix}$

(iii) The value of x (length of rectangular field) is

(a) 150 m (b) 400 m (c) 200 m (d) 320 m

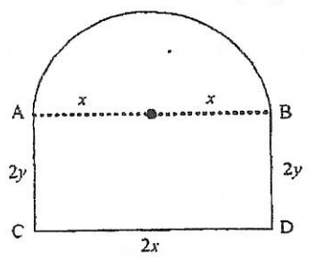
(iv) The value of y (breadth of rectangular field) is

(a) 150 m (b) 200 m (c) 430 m (d) 350 m

(v) How much is the area of the rectangular field?

(a) 60000 m^2 (b) 30000 m^2 (c) 65000 m^2 (d) 35000 m^2

18. Mr. Mohan, who is an architect, designs a building for a small company. The design of window on the ground floor is proposed to be different than other floors. The window is in the shape of a rectangle which is surmounted by a semi-circular opening. This window is having a perimeter of 10 m as shown in the figure:



Based on the above information answer any four questions:

(i) If $2x$ and $2y$ represent the length and breadth of the rectangular portion of the window, then the relation between the variable is

(a) $4y-2x=10-\pi$ (b) $4y=10-(2-\pi)x$

(c) $4y=10-(2+\pi)x$ (d) $4y-2x=10+\pi$

(ii) The combined area (A) of the rectangular region and semi-circular region of the window expressed as a function of x is

(a) $A=10x+\left(2+\frac{1}{2}\pi\right)x^2$ (b) $A=10x-\left(2+\frac{1}{2}\pi\right)x^2$

(c) $A=10x-\left(2-\frac{1}{2}\pi\right)x^2$ (d) $A=4xy+\frac{1}{2}\pi x^2$, where $y=\frac{5}{2}+\frac{1}{4}(2+\pi)x$

(iii) The maximum value of area of the whole window, A is

(a) $A=\frac{50}{4+\pi}cm^2$ (b) $A=\frac{50}{4+\pi}m^2$

(c) $A=\frac{100}{4+\pi}m^2$ (d) $A=\frac{50}{4-\pi}m^2$

(iv) The owner of this small company is interested in maximizing the area of the whole window so that maximum light input is possible. For this to happen, the length of rectangular portion of the window should be

(a) $\frac{20}{4+\pi}\,m$ (b) $\frac{10}{4+\pi}\,m$

(c) $\frac{4}{10+\pi}\,m$ (d) $\frac{100}{4+\pi}\,m$

(v) In order to get the maximum light input through the whole window, the area (in sq. m) of the only semi-circular opening of the window is

(a) $\frac{100\pi}{(4+\pi)^2}\,m^2$ (b) $\frac{50\pi}{4+\pi}\,m^2$

(c) $\frac{50\pi}{(4+\pi)^2}\,m^2$ (d) same as the area of rectangular portion of the window

PART-B

SECTION -III

19. Determine whether the relation $R = \{(x, y): y = x + 5, x < 4\}$ is reflexive, symmetric or transitive on the set of natural numbers.
20. Prove that $f : N \to N$ defined by $f(x) = x^2 + x + 1$ is one-one but not onto.

OR

If $f : R \to R$ be a function defined by $f(x) = 4x^3 + 7$, show that f is bijective.

21. Find the value of $\sec^{-1}\left(\frac{2}{\sqrt{3}}\right) + \cos^{-1}\left(\frac{-1}{\sqrt{2}}\right)$.
22. If $A = \begin{bmatrix} 3 & -3 \\ -3 & 3 \end{bmatrix}$ and $A^2 = \lambda A$, find λ.
23. If A and B are symmetric matrices of same order, then prove that AB – BA is skew symmetric matrix.
24. If $x = e^{\cos 2t}$ and $y = e^{\sin 2t}$ find $\frac{dy}{dx}$.
25. Show that $f(x) = x^3 - 3x^2 + 4x$, $x \in R$ is strictly increasing on R.

OR

Find the interval in which $x^3 - 12x$ is strictly increasing.

26. Find the slope of normal to the curve $4x^2 + 9y^2 - 36 = 0$ at $\left(\frac{3\sqrt{2}}{2}, \sqrt{2}\right)$.

OR

The slope of the curve $2y^2 - ax^2 = b$ at $(-1, 1)$ is -1. Find a & b.

27. Show that $f(x) = x^3 - x^2 + 7x - 3$ does not have maxima or minima.
28. Find the value of a if $f(x) = \begin{cases} \frac{\sqrt{5x+2} - \sqrt{4x+4}}{x-2}, & x \neq 2 \\ a, & x = 2 \end{cases}$ is continuous at $= 2$.

SECTION-IV

29. Let $f : R_+ \to [-9, \infty)$ given by $f(x) = 5x^2 + 6x - 9$. Prove that f is one-one and onto.
30. If $A = \begin{vmatrix} 2 & -3 \\ 3 & 4 \end{vmatrix}$, show that $A^2 - 6A + 17I = 0$. Hence find A^{-1}.
31. Express $A = \begin{bmatrix} 2 & 4 & -6 \\ 7 & 3 & 5 \\ 1 & -2 & 4 \end{bmatrix}$ as the sum of symmetric and skew symmetric matrices.
32. If $x = a(\theta - sin\theta)$ and $y = a(1 + \cos\theta)$ then find $\frac{d^2y}{dx^2}$.
33. Find the equation of the tangent(s) to the curve $y = 4x^3 - 2x^5$ which passes through the origin.

OR

If the tangent to the curve $y = x^3 + ax + b$ at $(1, -6)$ is parallel to the line $y - x = 5$, find a and b.

34. Find the intervals in which the function $f(x) = x^4 - 8x^3 + 22x^2 - 24x + 21$ is increasing or decreasing.

OR

Prove that $f(x) = \frac{4\sin x}{2 + \cos x} - x$ is an increasing function in $\left[0, \frac{\pi}{2}\right]$.

35. Show that of all the rectangles inscribed in a given circle, the square has the maximum area.

SECTION-V

36. Show that a right circular cylinder which is open at the top and has a given surface area will have the greatest volume if its height is equal to the radius of the base.

OR

Prove that the semi vertical angle of the right circular cone of given volume and least curved surface area is $\cot^{-1}\sqrt{2}$.

37. Solve the following system of equations using matrix method:

$x + 2y + 5z = 10$

$x - y - z = -2$

$2x + 3y - z = -11$

OR

Find the product $\begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix} \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$. Hence solve the system of equations $x - y = 3$, $2x + 3y + 4z = 17$, $y + 2z = 7$.

38. Let N be the set of natural numbers and R a relation on $N \times N$ defined by $(a, b)R(c, d) \Leftrightarrow ad = bc \ \forall \ (a, b), (c, d) \in N \times N$. Show that R is an equivalence relation. Also, find the equivalence class of $[(4, 8)]$.

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 21.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS : XII **SUBJECT – INORMATICS PRACTICES** **Max. Marks : 70**

Q1. Attempt any 10 questions. [10]

(1) To display 3rd element of a Series object S, you will write _____.
a. S[:3] b. S[2] c. S[3] d. S[:2]

(2) To get the Transpose of a Dataframe D1, you can write _____.
a. D1.T b. D1.Transpose c. D1.Swap d. All the these

(3) The axis 0 identifies a Dataframe's _____.
a. Rows b. Columns c. Values d. datatypes

(4) To iterate over horizontal subset of Dataframe, _____ function may be used.
a. iterate() b. iterrows() c. itercols() d. iteritems

(5) To add two dataframes value, _____ function may be used.
a. plus b. rplus c. add d. radd

(6) Which of the following is not a valid plotting function of pyplot?
a. plot() b. bar() c. line() d. pie()

(7) To specify the style of line as dashed, which argument of plot needs to be set?
a. line b. width c. style d. linestyle

(8) The command used to give a heading to a graph is _____.
a. plt.show() b. plt.plot() c. plt.xlabel() plt.title()

(9) Which argument should be set to display percentage share of each pie on a pie chart?
a. Label b. autopct c. explode d. wedge

(10) A software that can be freely accessed and modified is called
a. Synchronous software b. Package software c. Open source software
d. Middleware software

(11) Using someone else's Twitter handle to post something will be termed as :
a. Fraud b. Identity theft c. Online stealing d. Voilation

(12) Which of the following is not a Cyber crime?
a. Data Theft b. Forgery c. Damaged to data d. Installing Antivirus program

(13) Which function would you like to set the limits for x axis of the plot?
a. limits() b. xlimits c. xlim() d. lim()

(14) Which function is used to create a histogram?
a. histo b. histogram c. hist d. histtype

(15) Pyplot is in interface of Python's _____ library.
a. seaborn b. plotly c. ggplot d. matplotlib

Q2. (a) Write a Python code to create series **NAMES** to store any five students name. [2]

OR

Write code to create a Series object using the Python sequence [5,10,15,20,25].

(b) Explain the use of the series attributes with suitable example:
shape, hasnans [2]

(c) Write the code to modify the amount of section 'A' as 5000 and for section 'C' as 9000. Print the changed object. The series S1 is as given below:

A	6000
B	8000
C	4500
D	2300

[2]

(d) The series **S2** stores the marks of 5 students with names. Write Python code to names of the students who have scored more than 75%.

ROSHAN	80
SHYAM	67
REENA	85
KUNAL	91

[2]

(e) Write any two differences between **Series** and **List**. [2]

OR

How does Dataframe object specify indexes to its data rows? Explain wit example.

Contd...2

Q3. (a) Write the command to create the dataframe **DF1** for the given data: [3]

Name	Age	House
Arun	15	Chenab
Varun	17	Ganges
Shan	18	Yamuna

(b) What will be the output of the following code? [2]

```
import pandas as pd
import numpy as np
ARRAY1 = np.array( [ [11,12], [13,14], [15,16]], np.int32)
DF1 = pd.DataFrame(ARRAY1)
```

(c) Explain the use of the following attributes with suitable example using DataFrame named **DF1**: columns, values, empty [3]

(d) Write any two differences between DataFrame object and Series object. [2]

Q4. (a) How loc() function is different from iloc()? Explain with suitable examples using given DataFrame **DF1**: [2]

	Name	Test1	Test2	Test3
0	Shruti	12	15	18
1	Raman	15	18	24
2	Tanisha	19	14	16

(b) Write Python code to insert a new column **MOBILE** in the given dataframe **DF1.** [1]

(c) Write Python code to delete a column SCHOOLS from the given dataframe **DF1:** [1]

	HOSPITALS	SCHOOLS
DELHI	190	3300
MUMBAI	205	4150
KOLKATA	190	5600
CHENNAI	158	4500

(d) Observe the given data and write all the commands create the dataframe **DF1** for the given data and insert Boolean index as shown: [3]

DAYS	NO OF CLASSES
True	6
False	8
False	9
True	10

OR

Consider the following DataFrame, classframe,Rollno Name Class Section CGPA Stream

St1	1	Aman	IX E	8.7	Science
St2	2	Preeti	X F	8.9	Arts
St3	3	Kartikey	IX D	9.2	Science
St4	4	Lakshay	X A	9.4	Commerce

Write commands to :

i. Command to create a Dataframe DF1
j. Add a new column 'Activity' to the Dataframe
k. Add a new row with values (5 , Mridula ,X, F , 9.8, Science)

(e) Explain the use of head() and tail() functions with suitable example using dataframe **DF1.** [2]

(f) How can we check if a dataframe **DF1** has any missing value? Give example. [1]

Q5. (a) Ms Asmita wants to draw a line chart using list of elements named LIST. Complete the code to perform the following operations: [2]

```
import matplotlib.pyplot as plt
LIST = [5,10,15,20,25,40]
_____ statement 1
_____ statement 2
```

(b) Write the use of the following functions used in plotting: [2]
legend(), title()

OR

(a) How to add title for x axis and y axis for any bar chart? Write code.

Contd...3

(b) Give a suitable example to save any chart. Also, Write any two supported format. [2]
(c) Name any four major components of a chart. [2]
(d) What is Histogram? How is it useful ? [2]

Q6. (a) What do you understand by Data Visualization? [2]
(b) Write Python code to generate a Bar Graph for the given data: [3]

Sl No	Language	Speakers in Millions
1	Hindi	551.4
2	English	125.3
3	Bengali	091.1
4	Telugu	085
5	Marathi	084.2

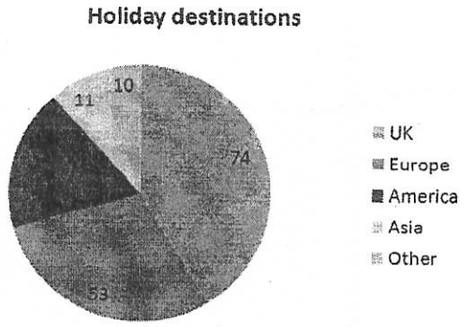
(c) Write Python code to generate a Pie chart for the given data: [3]

Hair colour	People
Blonde	8
Brown	12
Red	3
Grey	2
Black	6

OR

Write Python code to display the given graph

Holiday destination	No of people
UK	74
Europe	53
America	32
Asia	11
Other	10
Total	180



(d) Write a Python code to generate a Line graph: [2]

Time	Temperature
0	3
3	1
6	0
9	3
12	10
15	11
18	10
21	5

Q7. (a) What do you understand by Digital Footprint? [2]
(b) What is Intellectual property? What do you understand by Intellectual property rights? [2]
(c) What are the two threats to Digital property? [2]
(d) Explain the terms: copyright, patent [2]
(e) Mention any four email etiquette. [2]

DELHI PUBLIC SCHOOL, BHILAI

DATE : 21.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

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

Q.1 Why many European countries have deficit male population? (1×10 =10)

Q.2 Define Life expectancy.

Q.3 What is development?

Q.4 What is ageing population?

Q.5 Who coined the word Human Development?

Q.6 Poverty is the state of deprivation. How?

Q.7 What is Equity?

Q.8 What is the meaning of the place of last residence?

Q.9 What are 2 basic areas of Human Development?

Q.10 Which country has decided Happiness as the base of H. D. I.?

Q.11 What are the typical characteristics of population in different age groups? (3×10 =30)

Q.12 Why any state or country keep on recording the same H. D. I. year after year?

Q.13 What are the thoughts of Mahatma Gandhi about development?

Q.14 Discuss age-sex pyramid.

Q.15 What are the reasons for low H. D. I. in some states?

Q.16 How Human Development is calculated?

Q.17 What are the Indicators of Human Development as decided by India?

Q.18 Why is sex ratio in some areas lopsided?

Q.19 What is the difference between growth and development?

Q.20 Mention the range of Human Development as decided by U. N. D. P..

Q.21 What does higher urban population or higher rural population of a country indicate? Explain with examples. (5×6=30)

Q.22 What is the basic goal of development? Explain with examples the pillars of Human Development.

Q.23 The prime task before any development activity is to maintain parity between population and resources. Explain with examples.

Q.24 Why is the base and central portion of age sex pyramid of a developed countries more balanced?. Comment.

Q.25 What are the different categories of the countries based on H. D. I.? Write the number and score of the countries in each categories?

Q. 26. Define Literacy. How Occupational structure and Economy is related?

DELHI PUBLIC SCHOOL, BHILAI

DATE : 21.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS : XII **SUBJECT – APPLIED MATHEMATICS** **Max. Marks : 80**

General Instructions :

1. This question paper contains two parts A and B. Each part is compulsory. Part A carries 24 marks and part B carries 56 marks.
2. Part A has objective type questions and part B has descriptive type questions.
3. Both part A and B have choices.

Part – A

1. It consists of two sections I and II.
2. Questions 1 to 16 in Section I are Very Short Answer Type Questions carrying one mark each.
3. Section II contains 2 case studies. Each case study comprises of 5 case based MCQs. An examinee is to attempt any 4 out of 5 MCQs.
4. Internal choice is provided in 5 questions of section I.

Part – B

1. It consists of three sections III, IV and V.
2. Questions 19 to 28 in Section III are Short Answer Type Questions carrying 2 marks each.
3. Questions 29 to 35 in Section IV are Long Answer Type Questions carrying 3 marks each.
4. Questions 36 to 38 in Section V are Long Answer Type Questions carrying 5 marks each.
5. Internal choice is provided in 3 questions of section III, 2 question of section IV and 3 questions of section V. You have to attempt only one of the alternatives in all such questions.
6. Log table is allowed.

PART – A
SECTION – I

1. If A and B are matrices of order $3 \times n$ *and* $m \times 5$ respectively, then find the order of the matrix $5A - 3B$, given that it is defined.

2. Find the value of A^2,
where A is 2×2 *matrix whose elements are given by* $a_{ij} = \begin{cases} 1, & if\ i \neq j \\ 0, & if\ i = j \end{cases}$

3. Let $A = [a_{ij}]$ *be a square matrix of order* 3×3 *and* $|A| = -7$. *Find the value of* $a_{11}A_{11} + a_{12}A_{12} + a_{13}A_{13}$ where A_{ij} *is the cofactor of element* a_{ij}.

OR

If A and B are square matrices of order 3 *and* $|A| = 6, |B| = 4$, *then find the value of* $|3AB|$

4. *If A is a square matrix such that* $A^2 = I$, *then find* A^{-1}.

5. *If* $|A| = 3$ *and* $A^{-1} = \begin{bmatrix} 3 & -1 \\ \frac{-5}{3} & \frac{2}{3} \end{bmatrix}$, then write $adjA$.

6. *If A is a square matrix of order* 3, *with* $|A| = 9$, *then write the value of* $|2.adjA|$

OR

If A is a matrix of order 3×3 *such that* $A(adjA) = 5I$, *then find* $|adjA|$

7. *Find the interval in which* $f(x) = 2x^2 - 3x$ *is increasing.*

OR

Show that $f(x) = e^{\frac{1}{x}}$ *is decreasing for all* $x > 0$.

8. *If* $(x^3 + y)^3 = xy$, *find* $\frac{dy}{dx}$

9. *Find the slope of the tangent to the curve* $y = x^3 - 3x + 2$ *at the point whose x coordinate is* 3.

10. *If* $y = e^{x^3}$, *then find* $\frac{dy}{dx}$

Contd...2

11. *If a manufacturer's total cost function is given by* $C = \frac{x^4}{25} + 2x^2$, *find marginal cost function.*

OR

The demand function of monopolist is given by $p = 200 - x^2 - x^4$. *Find marginal revenue function.*

12. *Solve* $5x - 3 > 3x + 1$, *when* x *is an integer.*

13. *Find* $(186 \times 93) \bmod 7$.

14. If $\omega(n) = Number\ of\ distinct\ prime\ factors\ of\ n, n \in N$ *then find* $\omega(27)$.

15. *If* $\sigma_k(n) = Sum\ of\ k^{th}\ power\ of\ all\ the\ positive\ divisors\ of\ n, k \in N, n \in N$, *then find* $\sigma_2(8)$

16. *A can run 45 m while B runs 50 m. By what distance B beat A in a kilometre race?*

OR

In a game. A can give 20 points to B, A can give 32 points to C and B can give 15 points to C. How many points make the game ?

SECTION – II

Case study based questions are compulsory. Attempt any four sub parts from each question (17 – 18).

Each question carries 1 mark.

17. For annual prize distribution in a colony, the management committee of a residential colony decided to award some of its members (say x) for honesty, some (say y) for helping others and some others (say z) for supervising the workers to keep the colony neat and clean. The sum of all the awardees is 12. Three times the sum of awardees for cooperation and supervision added to two times the number of awardees for honesty is 33. If the sum of the number of awardees for honesty and supervision is twice the number of awardees for helping others.

Read the above passage and answer the following questions.

(i) By using matrix method, write the given data in the form of matrix equations

(a) $\begin{matrix} x+y+z=12 \\ x+2y+3z=33 \\ x-y+z=0 \end{matrix}$ (b) $\begin{matrix} x+y+z=12 \\ 2x+3y+3z=33 \\ x-2y+z=0 \end{matrix}$

(c) $\begin{matrix} x+y+z=33 \\ x+2y+3z=12 \\ x-y+z=0 \end{matrix}$ (d) $\begin{matrix} x+y+z=0 \\ x+3y+3z=33 \\ x-2y+z=12 \end{matrix}$

(ii) Coefficient matrix is given by

(a) $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & 3 \\ 1 & -1 & 1 \end{bmatrix}$ (b) $\begin{bmatrix} 1 & 1 & 1 \\ 2 & 3 & 3 \\ 1 & -2 & 1 \end{bmatrix}$

(c) $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & 3 \\ 1 & 1 & 1 \end{bmatrix}$ (d) $\begin{bmatrix} 1 & 2 & 1 \\ 1 & 3 & -2 \\ 1 & 3 & 1 \end{bmatrix}$

(iii) $|A| =$

(a) 2 (b) 4 (c) 3 (d) 1

(iv) $A^{-1} =$

(a) $\frac{1}{3}\begin{bmatrix} 9 & -3 & 0 \\ 1 & 0 & -1 \\ -7 & 3 & 1 \end{bmatrix}$ (b) $\begin{bmatrix} 9 & -3 & 0 \\ 1 & 0 & -1 \\ -7 & 3 & 1 \end{bmatrix}$

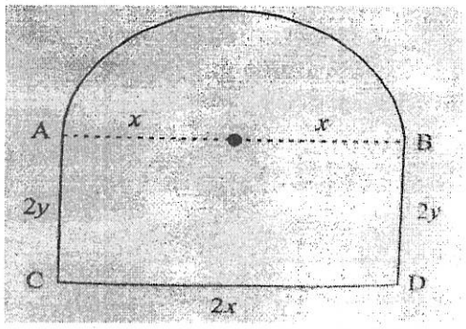
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(c) $\begin{bmatrix} 3 & -1 & 0 \\ 1 & 0 & -1 \\ -7 & 3 & 1 \end{bmatrix}$ (d) $\frac{1}{3}\begin{bmatrix} 9 & -1 & 0 \\ 1 & 0 & -1 \\ -7 & 1 & 1 \end{bmatrix}$

(v) *Solution is given by* :

(a) $x = 3, y = 2, z = 1$ (b) $x = 2, y = 3, z = 1$
(c) $x = 1, y = 2, z = 3$ (d) $x = 3, y = 4, z = 5$

18. Mr. Ashok, who is an architect, designs a building for a small company. The design of window on the ground floor is proposed to be different than other floors. The window is in the shape of a rectangle which is surmounted by semi-circular opening. This window having a perimeter of 10 m as shown in the figure.



Based on the above information answer the following

(i) *If* $2x$ *and* $2y$ represents the length and breadth of the rectangular portion of the window , then the relation between the variables is

(a) $4y - 2x = 10 - \pi$ (b) $4y = 10 - (2 - \pi)x$
(c) $4y = 10 - (2 + \pi)x$ (d) $4y - 2x = 10 + \pi$

(ii) The combined area (A) of the rectangular region and semi-circular region of the window expressed as a function of x is

(a) $A = 10x + \left(2 + \frac{\pi}{2}\right)x^2$ (b) $A = 10x - \left(2 + \frac{\pi}{2}\right)x^2$
(c) $A = 10x - \left(2 - \frac{\pi}{2}\right)x^2$ (d) *None of these*

(iii) *The maximum value of area of the whole window, A is*

(a) $A = \frac{50}{4+\pi}\,cm^2$ (b) $A = \frac{50}{4+\pi}\,m^2$ (c) $A = \frac{100}{4+\pi}\,m^2$ (d) $A = \frac{50}{4-\pi}\,m^2$

(iv) *The owner of this small company is interested in maximizing the area of the whole window so that maximum light input is possible.*
For this to happen, the length of rectangular portion of the window should be

(a) $\frac{20}{4+\pi}\,m$ (b) $\frac{10}{4+\pi}\,m$ (c) $\frac{4}{10+\pi}\,m$ (d) $\frac{100}{4+\pi}\,m$

(v) In order to get the maximum light input through the whole window, the area (in sq. m) of the only semi circular opening of the window is

(a) $\frac{100\pi}{(4+\pi)^2}\,m^2$ (b) $\frac{50\pi}{4+\pi}\,m^2$ (c) $\frac{50\pi}{(4+\pi)^2}\,m^2$ (d) None of these

PART - B
SECTION – III

19. If $A = \begin{bmatrix} 3 & -1 & 4 \\ 2 & 3 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 3 & 4 \\ 2 & 1 & 0 \\ -3 & 2 & 3 \end{bmatrix}$, find AB

Contd...4

20. Solve the following system of equations by matrix method :
$5x + 2y = 4, 7x + 3y = 5$

21. $If\ matrix\ A = \begin{bmatrix} 0 & 2b & -2 \\ 3 & 1 & 3 \\ 3a & 3 & -1 \end{bmatrix}$

$is\ given\ to\ be\ symmetreic, find\ values\ of\ a\ and\ b.$

OR

Show that all the diagonal elements of a skew symmetric matrix are zero.

22. $If\ A = \begin{bmatrix} 2 & 3 \\ 5 & -2 \end{bmatrix}, show\ that\ A^{-1} = \frac{1}{19} A.$

23. $If\ x^2y^4 = (x+y)^6, then\ find\ \frac{dy}{dx}$

24. A company has produced x items and the total cost C and total revenue R are given by the equation C = $100 + 0.015x^2$ $and\ R = 3x$. Find how many items should be produced to maximize the profit.

25. Find the interval in which $f(x) = \frac{2}{x} + \frac{x}{2}$, $x \neq 0$ $is\ increasing\ or\ decreasing.$

26. *Find the average speed of a boat in a round trip between two places 20 km apart. If the speed of boat in still water is 10 km/ hr and the speed of stream is 5 km /hr.*

OR

A boat can row upstream at $6km/hr$ and downstream at $10\ km/hr$. Find the speed of boat in still water and the speed of the stream.

27. A pipe can fill the tank in 3 hours and another pipe can empty the full tank in 4 hours. If both the pipe are opened together , then how much time will they take to fill the tank ?

OR

Pipe A can fill the tank 2 times faster than pipe B. If both pipes A and B running together can fill the tank in 24 minutes, find how much time will pipe B alone take to fill the tank?

28. In a 100 m race , A can give a start of 10 m to B and a start of 28 m to C . In the same race, how much start can B give to C ?

SECTION – IV

29. *Prove that* $\begin{vmatrix} x+2 & x+3 & x+2a \\ x+3 & x+4 & x+2b \\ x+4 & x+5 & x+2c \end{vmatrix} = 0,\ where\ a, b, c\ are\ in\ A.P.$

OR

Using Cramer's rule to solve the system of equations :
$x - 2y - 4 = 0$, $-3x + 5y + 7 = 0$

30. Find the equation of the tangent and normal to the curve $x^3 + y^3 = 6xy$ at point (3, 3).

OR

At what points will the tangent to the curve $y = 2x^3 - 15x^2 + 36x - 21$ be parallel to x – axis ?

31. *Two vessels A and B contain milk and water in the ratio 7 : 5 and 17 : 7 respectively. In what ratio mixtures from two vessels should be mixed to get a new mixture containing milk and water in the ratio 5 : 3 ?*

Contd...5

32. *Four persons enter into partnership, the second has twice as large as the first, and the third as much as half the sum of the capital of the first two and fourth has sum equal to the capital of the others. Distribute the total profits of ₹ 1,800,000 amongs the partners in proportion to the capital.*

33. *Calculate the index number for the year 2018 with 2013 as the base year by weighted aggregate method from the following data :*

Commodity	Price in ₹ in the year 2013	Price in ₹ in the year 2018	Weights
A	140	180	10
B	400	550	7
C	100	250	6
D	125	150	8
E	200	300	4

34. *For the given data compute index numbers for various years by taking 2004 to 2006 as base period*

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Price of commodity X	4	5	6	7	8	10	9	10	11

35. *The price relatives and weights of a set of a commodities are given below :*

Commodity	A	B	C	D
Price relative	125	120	127	119
Weight	x	$2x$	y	$y+3$

If the sum of weights is 40 and the index for the set is 122, find the numerical value of x and y.

SECTION - V

36. ***Using the properties of determinants, prove that :***

$$\begin{vmatrix} b+c & a-b & a \\ c+a & b-c & b \\ a+b & c-a & c \end{vmatrix} = 3abc - a^3 - b^3 - c^3.$$

OR

Using the properties of determinants, for any scalar p, prove that :

$$\begin{vmatrix} x & x^2 & 1+px^3 \\ y & y^2 & 1+py^3 \\ z & z^2 & 1+pz^3 \end{vmatrix} = (1 + pxyz)(x - y)(y - z)(z - x)$$

37. *If* $y = log\{x + \sqrt{x^2 + a^2}\}$, *prove that* $(x^2 + a^2)\frac{d^2y}{dx^2} + x\frac{dy}{dx} = 0$

OR

If $y = Pe^{ax} + Qe^{bx}$, show that $\frac{d^2y}{dx^2} - (a+b)\frac{dy}{dx} + aby = 0$.

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

OR

Solve the following system of linear inequalities graphically :

$x + 2y \leq 10,\ x + y \geq 1,\ x - y \leq 0,\ x \geq 0,\quad y \geq 0.$

DELHI PUBLIC SCHOOL, BHILAI

DATE : 21.09 .2021 | MID TERM EXAMINATION (2021-22) | Time : 3 Hours

CLASS : XII | SUBJECT – HOME SCIENCE | Max. Marks : 70

GENERAL INSTRUCTIONS:-

1. **All questions are compulsory.**
2. **There are total 36 questions.**
3. **Question paper is divided into three sections-A, B and C.**
4. **Section A has question no.1 to 14 (MCQs/objective type questions) and are of 1 mark each.**
5. **Section B has question no. 15 to 21 (case study based multiple choice questions) and are of 1 mark each.**
6. **Section C has question no.22 to 27 of 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.**
7. **Internal choices are given in some questions.**
8. **Support your answers with suitable examples wherever required.**

SECTION A (OBJECTIVE TYPE QUESTIONS)

Multiple choice questions:

Q1. In India, health care is provided at three levels. Which of the following is not correctly matched?

(a) Primary level- PHC (b) Secondary level- CHC

(c) Tertiary level- CHC (d) Tertiary level-AIIMS (1)

Q2. Name the world's largest Early childhood programme of the Government of India which aims to meet the health, nutrition, stimulation and early learning/education needs of children below six years of age in an integrated manner so as to foster their development.

(a) ICMR (b) Respite Care Homes (c) NOAPS (d) ICDS (1)

03. In What way job effectiveness in any work place can be improved ?

(a) Increasing errors (b) Increasing productivity

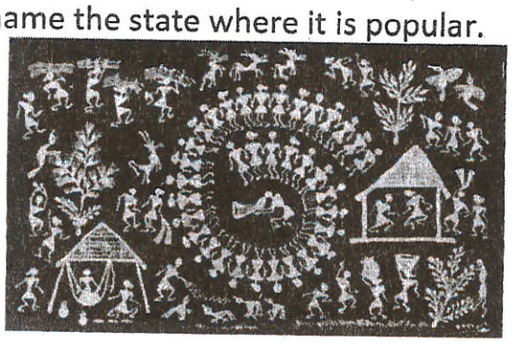
(c) Reducing error (d) name the state in which it is practiced. (1)

04. Identify the craft and name the state in which it is practiced. (1)



OR

Identify the painting and name the state where it is popular.



Contd...2

Q5. Which of the following is an incorrect statement-
(a) Enlarged thyroid known as goiter is the most common manifestation of iodine deficiency.
(b) Hemoglobin is required for carrying oxygen in the body.
(c) Due to Vitamin A deficiency growth of children is adversely affected.
(d) Protein deficiency is called as marasmus (1)

Q6. Bacteria multiply quickly in the Food temperature Danger zone. What is the temperature range of this?
(a) 2 C-30 C (b) 5 C-60 C (c) 4 C-50 C (d) 6 C-70 C (1)

Q7. _____diet includes soft, mashed and pureed foods for the elderly with problems in chewing.
(a) Mechanical soft (b) Liquid (c) Semi-liquid (d) Regular

OR

_____are those products that are specially manufactured for persons with specific needs.
(a) Nutraceuticals (b) Medical foods (c) Phytochemicals (d) Anti-oxidants (1)

Q8. In which year the first SOS village was set up in India and who were the beneficiaries?
(a) 1954 and disabled children (b) 1964 and abandoned children
(c) 1965 and special need children (d) 1963 and juvenile delinquents (1)

Q9. _____are abilities for adaptive and positive behaviour that enable greater productivity. (1)

Q10. The Factories Act 1948 makes sure that there is facility of _____ on the work premises.
(a) Canteen (b) Shade (c) Creche (d) First aid (1)

Q11. Rahul ate a sandwich which appeared good and smelled pleasant. Within few hours he complained of severe stomachache, nausea and vomiting. This could be attributed to-
(a) Food adulteration (b) Food intoxication
(c) Food infestation (d) Food contamination (1)

Q12. Which of the following is not the function of HACCP?
(a) Preventive approach to ensure food safety
(b) Enables only producers to utilise resources efficiently
(c) Assures consistently good quality products
(d) Detect hazards at any stage of processing or manufacturing of food (1)

Q13. _____ and _____ are two benefits of Ergonomics.(any two) (1)

Q14. In 1810,_____developed the method of canning.
(a) Louis Pasteur (b) Napoleon Bonaparte
(c) Nicolas Appert (d) Harvey Levenstein (1)

Contd...3

SECTION B (CASE STUDY BASED QUESTIONS)

Read the following passage and answer the questions:

Nutritional assessment is required to obtain information on the patient's nutritionalstatus and nutrient needs. It involves:

- Obtaining detailed information on health, diet, personal and medication histories.
- Anthropometric measurements.
- Relating the information on laboratory and physical measurements with the above and the physician's diagnosis.
- Interpreting all of the above to identify potential nutritional deficiencies and risk of future deficiencies.

Q15. For which of the following disease is nutrition and diet therapy used to improve the overall health of patients? **1**

(a) Cancer (b) Diarrhea (c) Asthma (d) Spondylitis

Q16. A modified diet with a lower protein intake is suggested in case of _____ **1**

(a) Kidney failure (b) Heart failure (c) Diabetes (d) Surgery

Q17. Identify the anti-oxidant. **1**

(a) Tryptophan (b) Arginine (c) Beta-carotene *(d)* Histidine

Read the following passage and answer the questions

In any society, nutritional problems are not just linked to food but to a variety of interacting/interrelated factors at various levels. While poverty is often the underlying cause, the situation becomes worse when a substantial proportion of families do not have access to basic amenities. Rural households have less access to toilets. Poor sanitation results in loss of work days and further economic loss. Further, considerable proportion of the population does not have safe drinking water.

Q18. **Given below are two statements labeled as Assertion (A) and reason (R)** **1**

Assertion(A)- Deficiency of iodine results in insufficient amount of thyroid hormone which is synthesized by the thyroid gland.

Reason(R)- IDD is an ecological phenomenon, largely due to deficiency of iodine in the soil.

Select the most appropriate answer from the options given below.

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

Q.19 The causes of malnutrition identify several levels of causes: immediate, underlying and basic. Which of the following is not one of the underlying causes ? **1**

(a) Insufficient rainfall for agriculture
(b) Inadequate access to food
(c) Inadequate care for mothers and children
(d) Insufficient health services and unhealthy environment

Q.20 Following are nutrition programmes and their examples operating in India. Select the incorrect option. **1**

(a) Food Supplementation Programme - Mid day meal
(b) Food Security Programme - Public distribution system
(c) ICDS-Annapurna Scheme
(d) Nutrient Deficiency Control Programme- National Prophylaxis Programme

Contd...4

Q.21	What is the mission of Public Health Nutrition ? (a) To prevent under nutrition and to maintain optimal nutritional status of individual and family (b) To prevent under nutrition and to maintain optimal nutritional status of individuals. (c) To prevent under nutrition and over nutrition problem of society. (d) To prevent both under nutrition and over nutrition and to maintain optimal nutritional	1

SECTION - C

Q22. Mention the groups vulnerable to Iron-deficiency anemia (IDA). What are its manifestations? **(2)**

Q23. What is KGBV scheme? **(2)**

Q24. Briefly describe the National Service Scheme. **(2)**

Q25. Discuss any two kinds of homes run by government for children from 3-18 years. **(2)**

Q26. Compare two advantages and disadvantages of food /diet based approach used to combat public nutrition problems. **(2)**

Q27. What are the guiding principles of ECCE as per the NCF (2005) publication? **(2)**

Q28. Mention any six causes of food spoilage. **(3)**

Q29. Why are elderly vulnerable? Give any two reasons to support your answer. Name any two programmes operating in our country for elderly people. Also tell about two administrative skills required to work with organizations running for elderly people. **(3)**

Q30. Write any four personal attributes which should be possessed by an entrepreneur. **(4)**

Q31. What do you understand by Food safety? Define the concepts – toxicity and hazard. Suggest various career avenues to your brother who wants to get some Job opportunities in Food Industry. **(4)**

Q32. Your friend wants to pursue career in the field of ECCE. Guide him/her about eight skills an early childhood professional needs to have. **(4)**

Q33. What is Codex Alimentarius and World Trade Organisation? **(4)**

Q34. Compare two points of differences between tube feeding and intravenous feeding. And also give three objectives each of diet therapy and role of clinical nutritionist. **(5)**

Q35. What do you understand by SOS Children's villages? What is their vision? Briefly explain their working and structure. **(5)**

Q36. Classify processed foods on the basis of extent and type of processing. **(5)**

DELHI PUBLIC SCHOOL, BHILAI

DATE : 25.09.2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS : XII **SUB. – PHYSICAL EDUCATION** **Max. Marks : 70**

General Instructions :

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

01. A knock-out tournament is also known as ..... .
(a) Elimination Tournament (b) Round Robin Tournament
(c) Challenge Tournament (d) Consolation Tournament

02. Planning in Sports leads to ..... .
(a) Increased expenditure (b) Better coordination
(c) Increased mistakes (d) Favouritism

03. Energy in food comes from ..... .
(a) Proteins/carbohydrates/fats (b) Vitamins (c) Water and fibre (d) Minerals

OR

Deformity originating from the legs includes ..... .
(a) Scoliosis (b) Lordosis (c) Knock knees (d) Kyphosis

04. The largest mineral in the human body is ..... .
(a) Iron (b) Zinc (c) Calcium (d) Selenium

05. Obesity can be checked by the regular practice of certain asanas. Among the most beneficial is :
(a) Vajrasana (b) Shavasana (c) Bhujangasana (d) Pawanmuktasana

06. Bhujangasana is also known as the ..... .
(a) Snake Pose (b) Cobra Pose (c) Reptile Pose (d) Cat Pose

07. Cognitive disorder do not include ..... .
(a) Poliomyelitis (b) Autism (c) Down Syndrome (d) Dyslexia

OR

Occupational Asthma is caused by ..... .
(a) Cold air (b) Dry air (c) Pollen (d) Dust and Smoke

08. Adaptive Physical Education Programme does not include ..... .
(a) Regular Physical check-up (b) Customised assessment
(c) Untrained instructors (d) Specialised equipment

09. Early childhood age for motor development in children is ..... .
(a) 0-1 year (b) 11-12 years (c) 9-10 years (d) 2-6 years

10. Cobra Pose is useful to correct ..... .
(a) Kyphosis (b) Scoliosis (c) Lordosis (d) Knock knees

11. ODD Patients do not show signs of ..... .
(a) Anger (b) Calmness (c) Vindictiveness (d) Irritation

12. A healthy BMI range for Indians is ..... .
(a) Less than 18 (b) 18-22 (c) 23-24.9 (d) More than 25

OR

Non-nutrient components of diet include ..... .
(a) Fibre (b) Fats (c) Sugars (d) Vitamins

13. What do you mean by round shoulders? Suggest any two physical activities for correcting round shoulders.

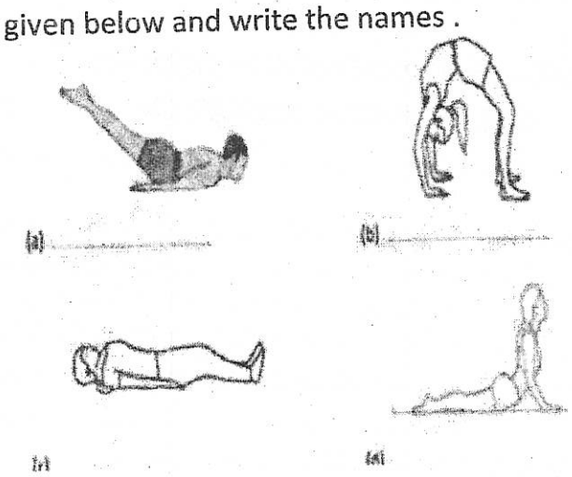
14. What are the major causes of disorder? (Any two)

OR

Write any two symptoms of obsessive Compulsive Disorder (OCD).

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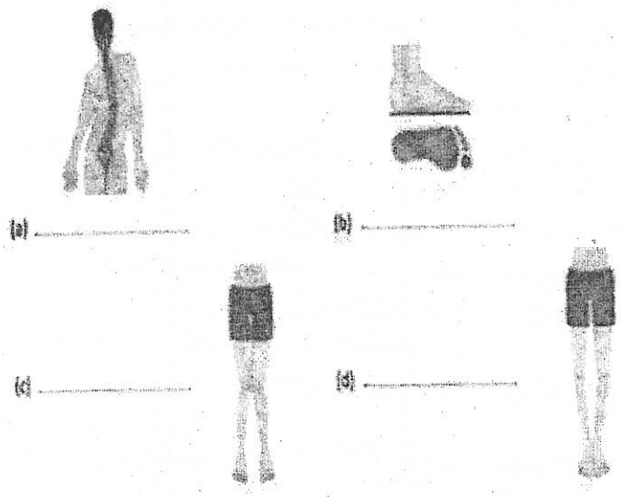
15. Identify the asanas given below and write the names .



(a) _____ (b) _____

(c) (d)

16. Identify the common postural deformities and give their names.



(a) _____ (b) _____

(c) _____ (d) _____

17. What is the importance of tournaments? Discuss any three points.

18. Discuss the objectives of planning in sports. (Any three)

19. What is the difference between food allergy and food intolerance?

OR

Give three examples of food myths.

20. What role does fat play in our food?

21. How can Yoga help in preventing diabetes?

OR

Discuss the procedure of Gomukhasana.

22. What is the role of Sukhasana in modern life?

23. Discuss the causes of OCD. (Any three)

24. What is a physical disability?

25. Describe knock knees and mention the causes that lead to it.

26. What is lordosis? What are the main causes and corrective measures for it?

OR

What do you mean by flat foot? Mention a few exercises to correct it.

27. What are knockout tournaments? Draw a fixture of 21 teams on knockout basis.

28. What do you mean by a balanced diet? Explain the components of diet.

OR

What do you mean by asthma? Explain the procedure, benefits and contraindications of Chakrasana.

29. Disability etiquette is necessary in Modern World. Explain.

30. Explain in detail the factors affecting motor development.

OR

Explain the reasons for low participation of women in sports in India.

DELHI PUBLIC SCHOOL, BHILAI

DATE : 25.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

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

INSTRUCTIONS:

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

1. Answer the following multiple choice questions. **(5)**

(i) Knuckle thread is a modified form of a _____ screw thread.
(a) Square **(b)** BSW **(c)** Metric **(d)** V- thread

(ii) Nut thickness (t) in terms of diameter is given by
(a) d **(b)** 0.7d **(c)** 0.8d (d) 1.2d

(iii) The angle between the flanks of a Metric thread is
(a) 55° **(b)** 90° **(c)** 60° **(d)** 75°

(iv) Which one among these is a temporary fastening?
(a) Welding **(b)** Riveting **(c)** Nut-Bolt **(d)** Pasting

(v) In isometric projection, the angle between any two isometric axis is
(a) 30° **(b)** 60° **(c)** 90° **(d)** 120°

2.(a) Construct an isometric scale which can convert length upto 120 mm. **(4)**

(b) Draw the isometric projection of an inverted pentagonal pyramid of base side 30 mm and axis of 60 mm resting on its apex on H.P. with one of its base side parallel to V.P. and nearer to the observer. **(7)**

(c) Draw an Isometric Projection of hemisphere resting centrally on its curved surface, on the top horizontal rectangular face of an equilateral triangular prism, keeping two triangular faces parallel to the V.P. Side of equilateral triangle = 50 mm, length of the prism = 70 mm and diameter of the hemisphere = 60 mm. **(13)**

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

OR

Draw to scale 1:1 the Front view and Plan of a square head bolt when it axis is perpendicular to H.P. Take the diameter of the bolt as 24mm, and length as 110mm. **(8)**

(b) Draw to scale 1:1, the front view and top view of a square nut with diameter 25mm, across flats, keeping its axis parallel to V.P. Give standard dimensions. **(5)**

OR

Draw to scale 1:1, the front view and top view of a hexagonal nut diameter 25mm, keeping its axis parallel to & V.P. if, two of its parallel faces are also parallel to V.P. Give standard dimensions. **(5)**

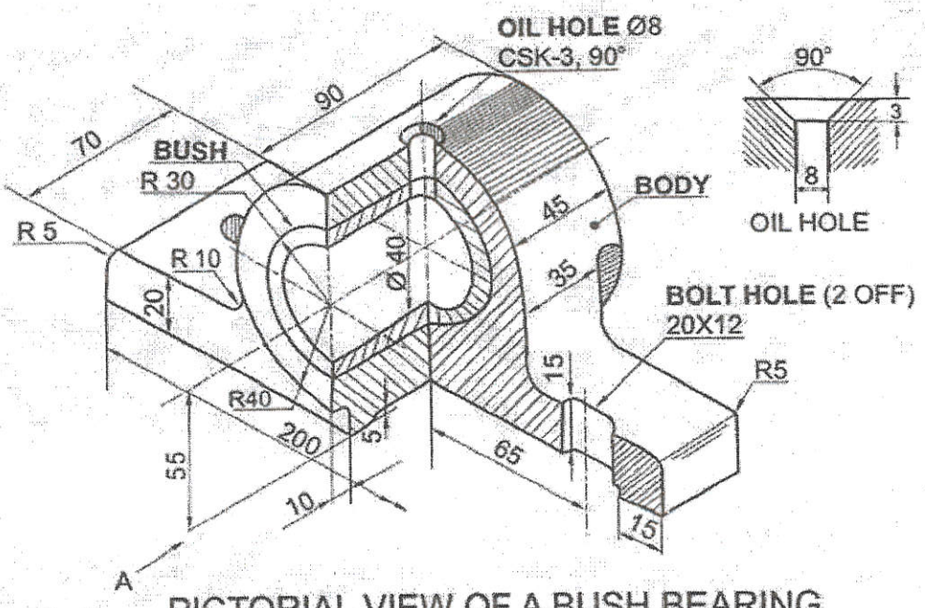
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4. The isometric view of a Bushed Bearing is shown below. Draw the following views to scale 1:1:-

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

(ii) Top view, **(8)**

Give 06 important dimensions. Print tittle, Projection symbol and scale used. **(6)**



PICTORIAL VIEW OF A BUSH BEARING
(RIGHT HALF IN SECTION)

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 14.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS :XII **SUB. – ENGLISH CORE** **Max. Marks : 80**

GENERAL INSTRUCTIONS-

1. This paper is divided into two parts: A and B. All questions are compulsory.
2. Separate instructions are given with each section and question, wherever necessary. Read these instructions very carefully and follow them.
3. Do not exceed the prescribed word limit while answering the questions.

PART A (40 MARKS)

Read the passage given below:

1. If one early June morning, you are suddenly stopped in your walk by a ringing 'pip-piu-pie-pee piu-piu' call coming from the trees in your park or garden, you will feel your heart suddenly lifted. Look around and you may see two large, handsome, black-and-white birds with long coattails chasing each other among the trees. They are pied cuckoos from Africa and are said to announce the arrival of the most fantastic show on earth-the Indian monsoon. Be assured; the curtains will rise in a month or so.

2. To get a good view of the onset of the monsoons, you need to be stationed on the coastline of India or up in the hills. The grand show of grey clouds approaches like an airborne army, preceded by cool breezes, filling the air with an electric charge so that you feel very happy. Spear of lighting flickers in the sky and the sound of thunder makes you feel excited. And then, it pours. The cracked earth without any green cover sucks down the flood of water, and then Mother Nature goes mad. Seeds scattered or buried like grains of sand of pebbles in the ground suddenly come to life. Shoots of plants rocket skywards, roots plunge into the soft, spongy earth sucking up water and nutrients. It's a hint the grasshoppers have been waiting for. And bugs, beetles, caterpillars, centipedes, etc. emerge in their billions, feasting on the fresh green plants in the fields (to the annoyance of many farmers) as also on each other.

3. There are miracles and there is music too: singing golden frogs appearing in large numbers in rain-filled ditch, taking part in a group song that Bollywood would have envied. They vanish the very next day. They'd been waiting patiently all through the blistering summer,deep underground, conserving whatever moisture they had soaked up. Fireflies wink through the trees in the hills, sending their greenish signals to one another in codes as precise as any we may use for our most secret messages.

4. All this is what the birds have been waiting for. Most birds have spent the spring and summer courting and now it's time to settle down. Baby birds need a lot of high protein at frequent intervals, which the rich supply of insect life so happily provides: caterpillars are eaten up in millions, as are furry moths, earthworms slurped down like noodles, spiky dragonflies beaten to bits to soften them up into baby food. The long-legged storks and herons get busy with fishing. As for the big guys like lions and tigers in the jungles: they too had it relatively easy during the summer when their thirsty prey came to the waterholes. Now, with water easily available, in streams and ponds all over they need to work harder for their meals. But yes, this is, perhaps, compensated by the arrival of baby deer and fawns are sweet and soft, not very experienced in the merciless ways of the lions and tigers, even if they may seem more like a snack than a main course meal. The animals get a rest from us, parks and sanctuaries too close down, not so much out of kindness as because the roads become impassable.

5. And then just as you are beginning to get tired of the green mould on your shoes, belts, and bags, and of all the sniffles and snuffles that the rains also bring (bacteria and viruses also love this season), the clouds begin to disperse and float away in large armies. But before this happens, at least once, do go out in the midst of a downpour, raise your face to the heavens, and dance and sing and celebrate this, the greatest show on earth.

Contd...2

Based on your understanding of the above passage, answer any ten of the questions given below choosing the most appropriate option:

(1) The winged messengers from Africa:

(i) bring rain from Africa (ii) bring the message that the rains are coming soon
(iii) create a lot of horrible noise (iv) are not welcome

(2) Baby birds benefit from the rains because:

(i) The mummy bird cannot fly in the rain. (ii) They need a lot of noodles.
(iii) The rain brings a lot of insects which they eat. (iv) They like wet nests.

(3) Humans don't visit the animals in sanctuaries during the rainy season because:

(i) Humans don't like to get wet. (ii) The paths to the sanctuaries become waterlogged.
(iii) Baby animals are born in sanctuaries. (iv) Humans get bitten during the rainy season.

(4) The green mould that grows on leather comes:

(i) from the creepy insects that come with the rain
(ii) because grass becomes very green during the rainy season
(iii) because of the moisture in the air during the rainy season.
(iv) from fluffy clouds in the sky

(5) Lions and tigers have an easy life during summer because:

(i) There is the easy availability of water everywhere.
(ii) They are not able to catch fawns.
(iii) Humans visit the sanctuaries a lot during summer.
(iv) Thirsty animals come to the waterholes as easy prey.

(6) With the rain, we find:

(i) that most of the bird's court (ii) that the clouds begin to disperse
(iii) parks and sanctuaries close down (iv) clean shoes, belts and bags

(7) During summers, where do the frogs live?

(i) deep underground (ii) in the ponds (iii) in gardens (iv) none of these

(8) What is the most awaited time for birds?

(i) summer (ii) winter (iii) spring (iv) rainy season

(9) Pick out the word or phrase from the passage which means the same as declare in Para 1.

(i) ringing (ii) To announce (iii) arrival (iv) call

(10) Pick out the phrase from the passage opposite in eaning to vanishing used in Para 2

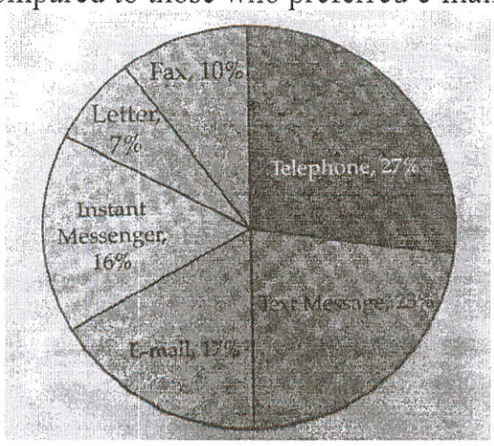
(i) appearing (ii) disappearing (iii) waiting (iv) conserving

(11) What does the word mould used in Para 4 mean in the passage

(i) furry growth of fungi (ii) loose friable soil (iii) pattern (iv) fashion

2. Read the passage gives below:

(1) A survey was conducted on student preferences with respect to the most popular means of communication among them. Surprisingly, the students didn't seem much interested in traditional means of communication. Only 7 percent were interested in writing letters to their friends or kins as compared to those who preferred e-mails.



2. However, the chief competition is between users of Instant Messenger and those of telephone lines. The users of fax lines as a medium of communication are only marginal. There are supporters of text messaging also. Overall, the survey had a mixed response from the students.

Contd...3

3. The students have indicated that out of the choices given in the survey questionnaires, they have indicated the most preferred option. But, most of the students are of the view that video calling needs to be mentioned in the questionnaire as it is the most effective and most popular means of communication. Further, voice messages are the second most preferred means of communication.

Based on your understanding of the above passage, answer any ten of the questions given below by choosing the most appropriate option: **(1 x 10=10)**

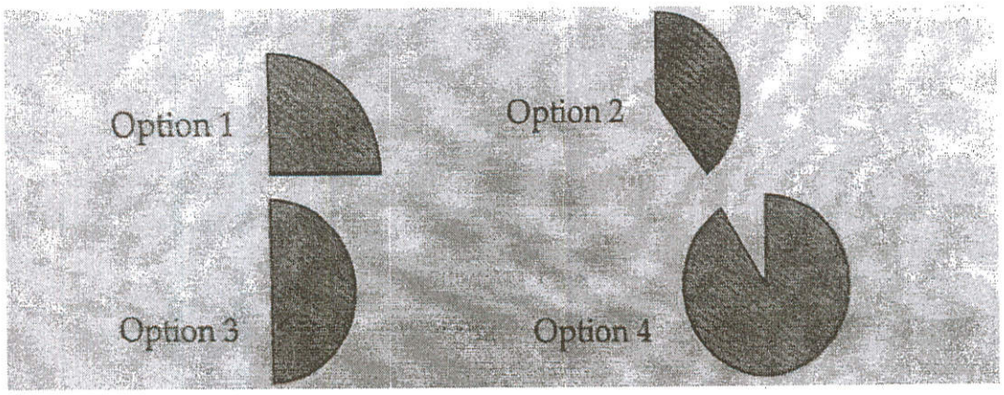
(1) Which of these means of communication are not generally preferred by the students?
(i) Traditional (ii) Modem (iii) All (iv) None of these

(2) Which means of communication totals to the combined usage of fax and letters?
(i) Telephone (ii) Text message (iii) E-mail (iv) Instant Messenger

(3) Which means of communication is liked by more than one-fourth of the students?
(i) Telephone (ii) Text message (iii) E-mail (iv) Fax

(4) Which means of communication is liked by exactly one-tenth of the students?
(i) Letter (ii) Fax (iii) E-mail (iv) Letters

(5) How much of the students prefer either telephones or text messages as a medium of communication?



(6) What is the overall response of the students to the survey?
(i) Biased (ii) Unbiased (iii) Mixed (iv) None of these

(7) What is the correct order of the medium of communication in decreasing order of preference?
(i) Voice message, Text message, Instant Messenger, Fax
(ii) Text message, Instant Messenger, Voice message, Fax
(iii) Instant Messenger, Fax, Voice message, Text message
(iv) Text message, Instant Messenger Fax, Voice message

(8) Which is the most preferred means of communication among the students?
(i) Telephone (ii) Text message (iii) Voice message (iv) Video calling

(9) Pick out the word or phrase from the passage which means the same as 'study (used in Para 1).
(1) Survey (ii) Popular (iii) Communication (iv) Kins

(10) Pick out the word or phrase from the passage which means opposite to 'gradual' (used in Para 2).
(i) Chief (ii) Instant (iii) Marginal (iv) Mixed

(11) The word 'view' used in Para 3 here means:
(i) Sight (ii) Thinking (iii) Procedure (iv) Opinion

3. Read the extract given below and attempt ANY TWO of the three given by answering the questions that follow. **(4x2=8)**

(a) All at once the church clock struck twelve. Then the Angelus. At the same moment the trumpets of the Prussians, returning from the drill, sounded under our windows. M. Hamel stood up, very pale, in his chair. I never saw him look so tall.

(i) What is Angelus?
(i). Prayers said in the morning (ii). Prayers said in the middle of the day
(iii). Prayers said in the evening (iv). All of these

Contd...4

(ii) Who are Prussians?

(i). Residents of Germany (ii). Residents of Poland
(iii) Residents of some parts of Austria. (iv) All of these combined

(iii) Why was Mr. Hamel so pale?

(i) He was tired by the end of the class. (ii). He was replaced by a German teacher.
(iii). He was not well. (iv). He was tired due to the mischief caused by the students.

(iv) 'I never saw him look so tall' means

(i) Sad (ii). Excited (iii). Lively (iv). Giant

(b) A few years later when I came to know the water of the cascades, I wanted to get into them. And whenever I did- whether I was wading the Tieton or Bumping River or bathing in Warm Lake of the Great Rocks- the terror that had seized me in the pool would come back. It would take possession of me completely. My legs would become paralyzed. Icy horror would grab my heart.

(1) Who is the author of the chapter from which the given lines have been taken?

(i) William Shakespeare (ii) William George Bernard Shaw
(iii) William Wordsworth. (iv) William Douglas.

(2) The Figure of Speech used in 'Icy horror' in the extract is?

(i) Personification (ii) Alliteration (iii) Metaphor (iv) Simile

(3) What experiences lead to the development of the terror?

(i) Being pushed into the pool. (ii) Being swept by waves at a beach.
(iii) Being trained by the instructor. (iv) Both (i) & (ii).

(4) How did the terror affect the author?

(i) He became isolated. (ii) He lost his appetite.
(iii) He lost his social life. (iv) He became aggressive.

(c) Sadao stopped, Hana at his side, and turned the man's head. They saw the face. 'A white man!' Hana whispered. Yes, it was a white man.

(1) What did doctor Sadao see when he turned the face of the man?

(i) Man with yellow hair. (ii) Man with yellow beard.
(iii) Man showing signs of being tortured. (iv) All of these.

(2) In what state was the white man lying?

(i) Unconscious (ii) Dead (iii) Sleeping (iv) Drunk

(3) Which part of the body of the young man had wound?

(i) Left side of the upper back. (ii) Head and chest.
(iii) Both the legs. (iv) Right side of the lower back.

(4) To which of these the white man belonged to?

(i) USArmy. (ii) US Navy. (iii) Japanese Army. (iv) Japanese Navy.

(4) Read the extract carefully and choose the correct option from the questions that follow. (Choose ANY ONE) **(1x4=4)**

(a) I looked again at her, wan, pale,
as late winters moon and felt that old
familiar ache, my childhood's fear,
but all I was see you soon Amma,
all I did was smile and smile and smile…

(1) Name the poet.

(i) Stephen Spender (ii) Kamala Das (iii) John Keats (iv) Pablo Neruda

(2) What was the poet's childhood fear?

(i) Losing mother (ii) Shifting from the parental house.
(iii) Shifting to a new city. (iv) Darkness.

(3) What has been compared to late Winter's moon?

(i) Best friend. (ii) Mother. (iii) Daughter. (iv) Sister.

(4) What were the parting words of the poet?

(i) As a late winter's moon (ii) Old familiar ache
(iii) See you soon (iv) Smile and smile and smile

(b) At the back of the dim class
one unnoted, sweet and young. His eyes live in a dream,
Of squirrel's game, in tree room, other than this

(1) Why was the class dim?

(i) Lack of electricity. (ii) Lack of windows. (iii) Lack of tube lights. (iv) All of these.

Contd..5

(2) What was he doing?
(i) Sleeping (ii) Eating (iii) Dreaming (iv) Singing.

(3) How is the young child different from others?
(i) He had books in his hands. (ii) He had food in his lunch box.
(iii) He had rings on his fingers. (iv) He had hopes in his eyes.

(4) What is a tree room?
(i) Brick room built on a tree branch. (ii) Temporary room built on a tree branch.
(iii) Hollow space inside the tree. (iv) Space between branches.

(5) Attemptanyeightquestionsfromthetengivenbelow. **(1x8=8)**

(a) Who of these are not there in Mukesh's family?
(i) Grandfather (ii) Grandmother (iii) Father (iv) Mother

(b) Where did Douglas camp?
(i) Cold Lake. (ii) Warm Lake. (iii) Cold Desert. (iv) Hot Desert.

(c) Where was the poetess driving to in the poem My Mother at sixty-six?
(i) Home. (ii) Office (iii) Airport. (iv) Railway Station.

(d) Where is Sam shown to have shifted to upon Charlie's advice?
(i) Galesburg (ii) Statonburg (iii) Shearburg (iv) Gladesburg

(e) Which language was made compulsory to be taught in the schools of Alsace and Lorraine?
(i) Portuguese (ii) French (iii) German. (iv) Spanish

(f) What is the theme of the poem My mother at sixty-six?
(i) Separation from the mother. (ii) Separation from the family.
(iii) Separation from the native town. (iv) Separation from friends.

(g) How is the last stanza of the poem An Elementary School Classroom in a Slum unlike rest of the poem?
(i) It is vague. (ii) It is realistic. (iii) It is optimistic. (iv) It is pessimistic.

(h) Which American President used to collect stamps?
(i) President Roosevelt. (ii) President Washington.
(iii) President Clinton. (iv) President Bush.

(i) Where did Sadao meet Tom?
(i) Flung from the river. (ii) Flung from the ocean.
(iii) At the clinic. (iv) In the bus.

(j) What did Douglas experience when he went down to the bottom of the pool for the first time?
(i) Pain and fear at first. (ii) Great happiness. (iii) Great disgust. (iv) Nothingness

PART B (40 MARKS)

6. Attempt any *one* of the following-

(a) Every year, in the central part of the city, a flower show is held in the month of February. Your school has received a circular from the District Collector inviting your students to visit it. Write a notice in about 50 words informing the students about the show and advising them to go and enjoy it. You are Navtej/Navita, Head Boy/ Head Girl, Sunrise Public School, Surat. **(3)**

OR

(b) You need to buy a flat. Draft a suitable advertisement in about 50 words to be published in the classified columns of a local newspaper giving all the necessary details of your requirement. You are Karan/Karuna, M-114, Mall Road, Delhi.

7. Attempt any *one* of the following-

You are Navdeep/Nidhi, a car dealer at Mahindra Automobiles First Choice, Geeta colony, Raipur. Draft an advertisement for a Maruti Wagon R that has come to your showroom for sale to be published in a local daily. **(3)**

OR

You have a three-bedroom flat in Dwarka, New Delhi, which you want to let out on rent. Draft an advertisement to be published in the Times of India, under classified columns. For further inquiry contact at 2758902. (Word limit: 50 words)

8. Attempt any *one* of the following-

National Book Trust organized a one-week-long book fair at Anna Grounds, Chennai. You visited the fair and bought a few books. You were pleased with the arrangements, enthusiasm of the visitors and the fact that books have not yet lost their relevance in the world of the Internet. Write a letter in 120-150 words to the Editor of a local newspaper to express your feelings. You are Lalit/Latha, 112, Mount Road, Chennai. **(5)**

Contd...6

OR

Students are required to cope with a lot of pressure in today's competitive environment. Write a letter to the Editor of a National Daily highlighting the increasing stress faced by students and suggest ways to combat the same. You are Sarvesh/Savita. (120-150 words).

9. Attempt any *one* of the following-

India is a land of diversity. One way in which it makes us feel proud of it is the number of festivals we enjoy. Write an article in 150-200 words on Festivals of India'. You are Karuna/Karan. **(5)**

You may use the given clues along with your own ideas.

- a land of diversity
- physical appearances, dresses, languages- heritage
- no distinction
- overwhelmed with joy
- unify the palaces
- eradicating the differences

OR

You are Shruti of Class XII-D. You are a member of the Environment Society of your school. Write an article on 'Reduce Environmental Pollution Through Education and Legislation. You can take help from the following clues. (120-150 words)

Clues-

- The environment getting destroyed due to pollutants and exploitation of natural resources.
- Contamination of the environment causes many diseases.
- People need to be educated about using environment-friendly items.

10. Answer any *five* of the following questions in 30-40 words each. **(2x5=10)**

(i) Why did the village elders occupy the backbenches in the classroom to attend the last lesson delivered by M. Hamel?

(ii) What is Mukesh's dream? Do you think he will be able to fulfill his dream? Why or why not?

(iii) What changes does the poet hope for in the lives of the slum children?

(iv) Why couldn't the people of Firozabad organize themselves into a cooperative?

(v) Write about the poet's fear as a child. Why does it surface when she is going to her destination (My mother at sixty-six)

(vi) How did the instructor build a swimmer out of Douglas?

11. Answer any *two* of the following questions in 30-40 words. **(2x2=4)**

(i) How did Dr. Sadao perform his duty as patriotic Japanese?

(ii) What forced Dr. Sadao to be impatient and irritable with his patient?

(iii) What was Sam's answer to Charley's dilemma?

12. Answer any *one* of the following questions in 120-150 words. **(5)**

Fear is something that we must learn to overcome if we want to succeed in life. How did Douglas get over his fear of water?

OR

How different from usual was the atmosphere at school on the day of the last lesson?

13. Answer any *one* of the following questions in 120-150 words. **(5)**

Why was Dr. Sadao's final decision the best possible one in such circumstances? Explain with reference to the story, 'The Enemy'.

OR

How did Charley reach the third level of Grand Central? How was it different from the other levels?

DELHI PUBLIC SCHOOL, BHILAI

DATE : 18.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS : XII **SUBJECT : BUSINESS STUDIES** **Max. Marks : 80**

General Instructions

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

SECTION-A

1. This type of organisation structure is most suitable when the size of the organisation is large, has diversified activities and operations require a high degree of specialisation.
   (a) Divisional structure (b) Functional structure
   (c) Network structure (d) Matrix structure **(1)**

2. Successful organisations do not achieve goals by chance but by following a deliberate process known as
   (a) Planning (b) Coordination (c) Controlling (d) Management **(1)**

3. Since more number of people have become beauty and health conscious, our economy has witnessed an unprecedented surge in the number of health care and beauty spas and wellness clinics. Identify the feature of business environment being described in the above case.
   (a) Totality of external forces (b) Dynamic nature
   (c) Interrelatedness (d) Relativity **(1)**

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

5. The principles of management do not provide readymade straight jacket solutions to all management problems because
   (a) The real business situations are complex (b) The real business situations are dynamic
   (c) The principles of management act as general guidelines (d) All of the above **(1)**

6. Which of the following cannot be completely delegated?
   (a) Responsibility (b) Authority (c) Accountability (d) All of the above **(1)**

7. Holy Public School had to postpone its Annual day function by a week as the Delhi administration decided to close for four days due to an increase in pollution levels in the city. Identify the related feature of management.
   (a) An intangible force (b) A group activity
   (c) A dynamic function (d) A multidimensional activity **(1)**

8. Planning requires logical and systematic thinking rather than guess work or wishful thinking. Identify the related feature of planning.
   (a) Planning focuses on achieving objectives (b) Planning is a mental exercise
   (c) Planning establishes standards for controlling (d) Planning is futuristic **(1)**

9. It is defined as the framework within which managerial and operating tasks are performed.
   (a) Span of management (b) Organisation structure
   (c) Informal organization (d) None of the above **(1)**

Contd...2

10. Assertion (A) : Social, political, legal and technological conditions are the specific forces of business environment.
Reason (R) : They have impact on all business enterprises and thus may affect an individual firm only indirectly.
(a) Both Assertion (A) and Reason (R) are true.
(b) Both Assertion (A) and Reason (R) are false.
(c) Assertion (A) is true and Reason (R) is false.
(d) Assertion (A) is false and Reason (R) is true. **(1)**

11. All other managerial functions are performed within the framework of the plans drawn. Identify the related feature of planning.
(a) Planning focuses on achieving objectives (b) Planning is pervasive
(c) Planning is primary function of management (d) Planning is futuristic **(1)**

OR

Which of the following is not a feature of planning?
(a) Planning is futuristic (b) Planning establishes standards for controlling
(c) Planning is pervasive (d) Planning focuses on achieving objectives

12. ---------- gives shape to the organisation structure.
(a) Extent of delegation (b) Span of managemen (c) No. of employees (d) Planning **(1)**

OR

---------- is the process by which the manager brings order out of chaos, removes conflict among people over work or responsibility sharing and creates an environment suitable for teamwork.
(a) Planning (b) Organisation (c) Staffing (d) Controlling

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

Harshit has opened an Antique shop in a posh area in Delhi. He has divided the work in smaller units and each employee is trained to perform his/her task efficiently. The sales persons are allowed to close a deal with a buyer by giving a maximum discount of 5%, whereas the decision to give any further discount rests with Harshit as the final authority. In the earlier period of his business, employees were asked to put in extra hours of work. In return he had promised to give them a special incentive within a year. Therefore, when the business was doing well, he honoured his commitment by giving bonus to his employees. He also instructed his employees that communication from top to bottom should follow the official lines of command.

13. Harshit has divided the work in smaller units and each employee is well trained to perform his/her task efficiently. Which principle of management is being followed here?
(a) Centralization and Decentralization (b) Division of work
(c) Discipline (d) Order **(1)**

14. "The sales persons are allowed to close a deal with a buyer by giving a maximum discount of 5%, whereas the decision to give any further discount rests with Harshit as the final authority." Identify the principle of management being followed here:
(a) Centralization and Decentralization (b) Authority and Responsibility
(c) Unity of command (d) Unity of direction **(1)**

15. "Therefore, when the business was doing well, he honoured his commitment by giving bonus to his employees." Which principle of management is highlighted here?
(a) Discipline (b) Order (c) Remuneration of employees (d) Unity of Direction **(1)**

16. "He also instructed his employees that communication from top to bottom should follow the official lines of command." Identify the principle of management highlighted here.
(a) Authority and Responsibility (b) Order (c) Scalar Chain (d) Unity of Direction **(1)**

Contd...3

Read the following text and answer the following questions on the basis of the same.

Sadhna Ltd is a company dealing in devotional products. They have invested a huge amount on Research and Development and focus on improvising the quality and features of their products. According to a study, about 70% of India's population still lives in 638000 villages whereas more that 55% of retailing actually happens in metros, mini-metros and cities. Therefore in order to reach out to more consumers beyond the top towns, it has partnered with top e-commerce platforms like Amazon, Snapdeal and Big Basket among others.

17. Name the marketing function being highlighted in the above case.
    (a) Branding (b) Gathering and analysing market information
    (c) Physical distribution (d) Marketing planning **(1)**

18. Identify the component of marketing mix described in the above lines.
    (a) Product (b) Price (c) Place (d) Promotion **(1)**

19. Which level of channel of distribution has been adopted by the company?
    (a) Zero level (b) One level (c) Two level (d) Three level **(1)**

20. Which marketing management philosophy is being followed by Sadhna Ltd?
    (a) Production (b) Product (c) Selling (d) Marketing **(1)**

SECTION-B

21. Mahajan Industries is a company dealing in office furniture. The company chose to diversify its operations to improve its growth potential and increase market share. The company decided to add 'Home Interiors and Furnishings' as a new line of business activity.
    (a) Which organisation structure should be adopted by the company?
    (b) State any two merits of such organisation structure. **(1+2=3)**

22. Name the process which provides the requisite amount, quality, timing and sequence of efforts and ensures that planned objectives are achieved with a minimum of conflicts. State any two features of the concept identified. **(1+2=3)**

23. Surya is engaged in the manufacturing of refrigerators. He surveyed the market and found that customers need a refrigerator with a separate provision of water cooler in it. He decided and launched the same refrigerator in the market. Identify and explain the marketing management philosophy involved. **(3)**

OR

Floral products Ltd is a natural and ethical beauty brand famous for offering organic beauty products for men and women. The company used plant-based materials for its products and is No. 1 beauty brand in the country. It not only satisfies its customers but also believes in the overall protection of the planet. Identify and explain the marketing management philosophy being followed by Floral products Ltd. **(3)**

24. 'Planning eliminates changes/uncertainties.' Do you agree? Give reason in support of your answer. **(1+2=3)**

OR

'Following a pre-determined plan, even when circumstances have changed, is not in the interest of the organisation.' Which limitation of planning is indicated here? Explain. **(1+2=3)**

SECTION-C

25. Two Big Banner movies were scheduled to be released on the same date. However, at the last moment, release of one movie had to be postponed due to opposition by a group of people because of some unethical content in the movie. The loss suffered by movie postponed, provided opportunity for the released movie, to earn huge revenues.
    (a) Which feature of business environment is highlighted in the given case? Explain it.
    (b) Identify and explain the component of business environment, which led to the postponement of movie. **(2+2=4)**

Contd...4

26. Divya has set up a small factory to manufacture different kinds of eco- friendly footwear. The footwears are available in limited varieties and sizes thereby eliminating superfluous diversity of footwears. She proposes to adopt a logical approach to her business rather than hit and trial method as it will result in less wastage of time and materials. She plans to adopt paternalistic style of management in order to avoid any kind of class-conflict that may emerge between her and the workers. Moreover, she plans to seek the opinion of her workers before taking any important decisions and also offers incentives to them for providing valuable suggestions for the business.
    (a) Identify and explain the various principles of scientific management that Divya plans to apply in her business.
    (b) Identify and explain the technique of Scientific management followed by Divya? **(3+1=4)**

27. What are the elements of Marketing mix? Explain **(4)**

OR

Explain any four Marketing management philosophies. **(4)**

28. Explain the steps of Organising. **(4)**

OR

What do you mean by Delegation of Authority? State the three elements of Delegation. **(1+3=4)**

29. 'The most feasible, profitable and with least negative consequences alternative is finalised.' Identify the step of planning process highlighted here and explain the previous three steps preceded by the step identified above. **(4)**

30. Laxmi Ltd, a fire cracker manufacturing company launched some new products on eve of Diwali which attracted many buyers. Although the product was in great demand, appropriate safety warnings for use were not mentioned on the packets that led to many accidents.
    (a) Identify the important product related decision that was not taken into consideration by the company.
    (b) State any three functions of this product related decision. **(1+3=4)**

SECTION-D

31. Hi Tech Ltd has grown in size. It was a market leader but with changes in business environment and with the entry of MNCs, its market share is declining. To cope up with the situation, the CEO starts delegating some of his authority to the General Manager, who also felt himself overburdened and with the approval of CEO disperses some of his authority to various levels throughout the organisation.
    (a) Identify the concept of management discussed above.
    (b) Explain any five importance of the concept identified above. **(1+5=6)**

32. Management seeks to achieve various objectives. Explain these objectives. **(6)**

OR

Do you think management has the characteristics of a full-fledged profession? Give reasons in support of your answer. **(1+5=6)**

33. Star Tech Ltd is facing huge losses. The owner of the company is an MBA pass out. Even then many things in the organisation are happening which are indicative of poor management. There is no specific sharing of work and any time any employee is asked to do anything. This had lead to wastage of efforts and lack of specialisation. There is no clear and fair agreements between the workers and the management. Management is mostly found to be ignorant of not fulfilling the promises done by it. A departmental head had appointed one of his relative as store manager even after knowing that he is very lazy and a shirker by nature. He quite often don't turn up for job on time. This has created resentment among other employees.

    Identify and explain the principles of management violated in the above case by quoting the lines from the above paragraph. **(6)**

34. Explain any six functions of marketing. **(6)**

OR

Explain any six factors affecting price determination of a product. **(6)**

DELHI PUBLIC SCHOOL, BHILAI

DATE : 18.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

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

General Instructions:

Read the following instructions very carefully and strictly follow them:

1. This question paper comprises four sections – A, B, C and D. There are 33 questions in the question paper. All questions are compulsory.
2. **Section A** - Questions no. 1 and 2 are case-based questions, having 4 MCQs. Each carrying 1 mark.
3. **Section A** - Questions no. 3 to 16 are MCQs type questions carrying 1 mark each.
4. **Section B** - Questions no. 17 to 25 are short answer type questions or reasoning assertion type questions carrying 2 marks each.
5. **Section C** - Questions no 26 to 30 are short answer type questions or reasoning assertion type question carrying 3 marks each.
6. **Section D** - Questions no 31 to 33 are long answer type questions carrying 5 marks each.
7. There is no overall choice in the question paper. However, an internal choice has been provided.
8. Use of log tables and calculators is not permitted.

Section A

Q.1. Read the passage given below and answer the following questions: **(1×4=4)**

When a protein in its native form, is subjected to physical changes like change in temperature or chemical changes like change in pH, the hydrogen bonds are disturbed. Due to this, globules unfold and helix get uncoiled and protein loses its biological activity. This is called denaturation of protein.

The denaturation causes change in secondary and tertiary structures but primary structures remains intact. Examples of denaturation of protein are coagulation of egg white on boiling, curdling of milk, formation of cheese when an acid is added to milk.

The following questions (1-4) are multiple choice questions, choose the most appropriate answer:

1. Mark the wrong statement about denaturation of proteins.
   a. The primary structure of the protein does not change.
   b. Globular proteins are converted into fibrous protein.
   c. Fibrous proteins are converted into globular protein.
   d. The biological activity of the protein is destroyed.
2. Which Structure(s) of proteins remain(s) intact during denaturation process?
   a. Both secondary and tertiary structures. b. Primary structure only.
   c. Secondary structure only d. Tertiary structure only
3. α-helix β-pleated structures of proteins are classified as
   a. primary structure b. secondary structure
   c. tertiary structure d. quaternary structure
4. Cheese is a
   a. globular protein b. conjugated protein
   c. denatured protein d. derived protein

Q.2. Read the passage below and answer the following questions:-

An ideal solutions may be defined as the solution which obeys Raoult's law exactly over the entire range of concentration. The solutions for which vapour pressure is either higher or lower than that predicted by Raoult's law are called non-ideal solutions.

Non-ideal solutions can show either positive or negative deviations from Raoult's law depending on whether the A-B interactions in solutions are stronger or weaker than A-A and B-B interactions.

The following questions (1-4) are multiple choice questions. Choose the most appropriate answer.

1. Which of the following questions is/are ideal solution(s)?
   (I) Bromoethane and iodoethane (II) Acetone and choloroform
   (III) Benzene and acetone (IV) n-heptane and n-hexane.
   a. only I b. I and II c. II and III d. I and IV
2. For which of the following questions ΔH_{mix} and ΔV_{mix} is negative.
   a. Acetone and aniline b. Ethyl alcohol and cyclohexane
   c. Acetone and CS_2 d. Benzene and toluene

Contd...2

3. Which of the following is not true for positive deviation.
   a. The A-B interactions in solution are weaker than A-A and B-B interactions
   b. $P_A < P^O_A \times_A$ and $P_B < P^O_B \times_B$
   c. Carbon tetrachloride and chloroform mixture example of positive deviations.
   d. All of these

4. Water-HCl mixture:
   (I) shows positive deviations (II) forms minimum boiling azeotrope
   (III) shows negative devlations (IV) forms maximum boiling azeotrope
   a. I and II b. II and III c. I and IV d. III and IV

Q.3 Which of the following conditions favours the existence of substance in the solid state?
   a. High temperature b. low temperature
   c. High thermal energy d. Weak cohesive forces

OR

Which type of crystals contains more than one Bravais lattice?
   a. Hexagonal b. Triclinic c. Rhombohedral d. Monoclinic

Q.4 Colligative properties depend on:
   a. the nature of the solute particles dissolved in solution
   b. the number of solute particles in solution
   c. the physical properties of the solute particles dissolved in solution
   d. the nature of solvent particles

Q.5 Aryl halides are less reactive towards nucleophilic substitution reaction as compared to alkyl halides due to
   a. formation of less stable carbonium ion in aryl halides
   b. resonance stabilization in aryl halides
   c. presence of double bond in alkyl halides
   d. inductive effect in aryl halides

Q.6. What do you understand by the term 'Anisotropy' ?

Q.7 Anisole reacts with HI to form _____ and _____ (Fill in the blanks)

Q.8. A crystal is formed by two elements X and Y in cubic structure. X atoms are at the corners of a cube while Y atoms are at the face centre. The formula of the compound will be:
   a. XY b. XY_2 c. X_2Y_3 d. XY_3

Q.9. If 1 g of solute (molar mass = 50 g mol^{-1}) is dissolved in 50 g of solvent and the elevation in boiling point is 1 K, The molal elevation constant (K_b) of the solvent is
   a. 2 b. 3 c. 2.5 d. 5

Q.10. In hexagonal close packing in 3 Dimensions, what is the coordination number of a sphere ?

Q.11. Iodoform test is not given by :
   a. ethanol b. ethanal
   c. pentan-2one d. pentan-3-one

Q.12 What are the different types of RNA found in the cell?

OR

What are the bases present in DNA.

Q.13 For the orthorhombic system, axial length ratios are $a \neq b \neq c$ and the axial angles are:
   a. $\propto = \beta = \gamma \neq 90^0$ b. $\alpha \neq \beta \neq \gamma \neq 90^0$
   c. $\propto = \beta \neq \gamma \neq 90^0$ d. $\alpha = \beta = \gamma = 90^0$

Q.14 Sea water is desalinated to get fresh water by which of the following methods?
   a. When pressure more than osmotic pressure is applied pure water is squeezed out of sea water by reverse osmosis
   b. When excess pressure is applied on sea water pure water moves in by osmosis
   c. Water moves out from sea water due to osmosis
   d. Salt is participated from sea water when kept undisturbed for sometime.

OR

At a given temperature, osmotic pressure of a concentrated solution of a substance:
   a. is higher than that of a dilute solution
   b. is lower than that of a dilute solution
   c. is same as that of a dilute solution
   d. cannot be compared with osmotic pressure of dilute solution

Contd...3

Q.15 The position of –Br in the compound $CH_3CH{=}{=}CHC(Br)(CH_3)_2$ can be classified as _____

a. allyl b. aryl c. vinyl d. secondary

Q.16 CH_3CH_2OH can be converted into CH_3CHO by:

a. Catalytic hydrogenation b. treatment with $LiALH_4$

c. treatment with pyridinium chlorochromate d. treatment with $KMnO_4$

OR

Propanone on reaction with alkyl magnesium bromide followed by hydrolysis will produce:

a. primary alcohol b. secondary alcohol

c. tertiary alcohol d. carboxylic acid

Q.17 Give two points of difference between Schottky and Frenkel defects.

Q.18 (a) State Henry's Law

(b) Give one application of Henry's Law

OR

(a) State Raoult's law for a binary solution containing both components as volatile.

(b) How many grams of NaOH are present in 250 ml of 0.5 M NaOH solution.

Q.19 Give two points of difference between DNA & RNA.

OR

Give two points of difference between Globular & Fibrous Proteins.

Q.20 Convert the following

(a) Propene to 1-Bromopropane

(b) Phenol to Chlorobenzene

Q.21 Explain the following:

(a) Kolbe's reaction

(b) Williamson's synthesis

Q.22 What are monosachharides? Give 2 examples.

Q.23 (a) What are enantiomers ?

(b) Explain Cumene process to prepare Phenol.

Q.24 Read the paragraph given and answer the question numbers (i) and (ii)

Most important crystal lattices are the simple cubic, body centered cubic and face-centred cubic. In simple cubic lattice, all the atoms are present at all the corners of the cube. In body-centred cubic lattice, atoms are present at all the corners and at the body-centre. In face-centred cubic lattice, atoms are present at the corners and at the centres of all six faces. In the formation of crystals, the constituent particles get closely packed together. The closely packed arrangement is that in which maximum available space is occupied leaving minimum vacant space. The most efficient close packing, can be achived in two ways, one which is called hexagonal close packing (hcp) and the other, cubic close packing (ccp or fcc)

Directions:

A statement of assertion (A) is followed by a statement of Reason (R) is given. Choose the correct answer out of the following choices.

(a) Assertion (A) and Reason (R) both are correct statements and Reason (R) is correct explanation for Assertion (A)

(b) Assertion (A) and Reason (R) both are correct statements but Reason (R) is not correct explanation for Assertion (A)

(c) Assertion (A) is correct statement but Reason (R) is wrong statement

(d) Assertion (A) is wrong statement but Reason (R) is correct statement

(i) Assertion (A) : Face-centered cubic unit cell has 4 atoms per unit cell.
Reason (R) : In Face-centered cubic unit cell, there are 8 atoms at the corners & 6 atoms at face centres.

(ii) Assertion (A): CsCl has body-centered arrangement.
Reason (R): CsCl has one Cs^+ ion and 8 Cl^- ions in its unit cell.

Contd...4

DELHI PUBLIC SCHOOL, BHILAI

DATE : 16.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

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

General Instructions:

(i) This question paper contains two parts A and B. Each part is compulsory.

(ii) Both Part A and Part B have choices.

(iii) Pat A has 2 sections:

(a) Section I is of short answer questions, to be answered in on word or on line.

(b) Section II has two case study based questions. Each case study has 5 case-based sub-parts. An examinee is to attempt any 4 out of the 5 subparts.

(iv) Part B is Descriptive Paper.

(v) Part B has three sections:

(a) Section I is of short answer questions of 2 maks each in which two questions have internal options.

(b) Section II is of long answer questions of 3 marks each in which two questions have internal options.

(c) Section III is of very long answer questions o 5 marks each in which one question has internal option.

(vi) All programming questions are to be answered using Python Language only.

PART A

Section I (Attempt any 15 questions from question no. 1 to 21)

1.	Which of these is not a core data type?						
(a)	Lists	(b)	Dictionary	(c)	Tuples	(d)	Class
2.	Which type of error occurs when you execute the code >>>fruit1=apple						
(a)	Syntax Error	(b)	Name Error	(c)	Value Error	(d)	Type Error
3.	The statement: bval=str1>str2 shall return_____as the output if two strings str1 and str2 contains "Delhi" and "New Delhi"						
(a)	True	(b)	Delhi	(c)	New Delhi	(d)	False
4.	Which of the following is not consider a valid identifier in Python?						
(a)	Two2	(b)	_main	(c)	Hello_rsp1	(d)	2 hundred
5.	What is the output of the statement? print("xyyzxyzxzxyy".count('yy',1))						
(a)	2	(b)	0	(c)	1	(d)	Error
6.	What will be the output when the following code is executed? >>>str1="helloworld" >>>str1[:-1]						
(a)	dirowolleh	(b)	hello	(c)	world	(d)	Helloworld
7.	Functions that do not return any value are known as:						
(a)	Fruitful functions	(b)	Void functions	(c)	Library functions	(d)	User define functions
8.	A variable created or defined within a function body is classified as :						
(a)	local	(b)	global	(c)	Built-in	(d)	Instance
9.	Name the Statement that sends back a value from a function.						
(a)	print	(b)	input	(c)	return	(d)	None
10.	Which of the following is not a valid namespace?						
(a)	Global namespace	(b)	Public namespace	(c)	Built-in namespace	(d)	Local namespace
11.	What is the output of the function shown below(random module has already been imported random.choice('sun')						
(a)	sun	(b)	u	(c)	Either s, u or n	(d)	Error
12.	To read two characters from a file object fobj, the command should be:						
(a)	fobj.read(2)	(b)	fobj.read()	(c)	fobj.readline()	(d)	fobj.readlines()
13.	The readlines() method returns:						
(a)	string	(b)	A list of integer	(c)	A list of single characters	(d)	A list of lines
14.	Which module is required to use the built –in function dump()?						
(a)	math	(b)	flush	(c)	pickle	(d)	Unpickle
15.	Which is/are the basic I/O stream(s) in file?						
(a)	Standard Input	(b)	Standard Output	(c)	Standard Error	(d)	All of the above
16.	Which of the following functions is used to write data in the binary mode?						
(a)	write	(b)	output	(c)	dump	(d)	Send
17.	Which of the following arguments works with implicit values that are used if no value is provided?						
(a)	keyword	(b)	required	(c)	variable-length	(d)	Default

Contd...2

18.	What is the output of the program given below? X=50 def func(x): x=2 func(x) print('x is now',x)						
(a)	x is now 50	(b)	x is now 2	(c)	x is now 100	(d)	Error
19.	What is the range of values that random.random() can return?						
(a)	[0.0,1.0]	(b)	(0.0,1.0]	(c)	(0.0,1.0)	(d)	[0.0,1.0)
20.	Which of the following is the correct syntax of f.writelines()?						
(a)	f.writelines(sequence)	(b)	fobj.writelines()	(c)	fobj.writelines(sequence)	(d)	fobj.writeline()
21.	Write the full form of CSV.						

Section-II

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

22. Aditya Chand o class 12 is writing a program to create a CSV file "user.csv" which will contain user name an password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____                    # Line 1
def addCsvFile(UsrNam,PasWord):  # to writ/add data into the CSV file
    f=open('usr.csv','_____')    # Line 2
    newFileWriter=csv.writer(f)
    newFileWriter.writerow([UserName,PassWord])
    f.close()
# csv file reading code
def readCsvFile():               # to read data from CSV file
    with open('user.csv','r') as newFile:
        newFileReader=csv._____(newFile)    # Line 3
        for row in newFileReader:
            print(row[0],row[1])
    newFile._____                #  Line 4
addCsvFile("Arjun","123@456")
addCsvFile("Arunima","aru@nima")
addCsvFile("Ameeta","myname@AMI")
readCsvFile()                    # Line 5
```

(a) Name the module he should import in Line 1. 1

(b) In which mode, Aditya should open the file to add data into the file. 1

(c) Fill in the blank in Line 3 to read the data from a csv file. 1

(d) Fill in the blank in Line 4 to close the file. 1

(e) Write the output he will obtain while executing Line 5. 1

23. Aman Alam has been asked by his senior to complete the following code. The code uses a text file namely mssage.txt, which stores the following text:

The stimulus would focus on job manufacturing and a further extension of the Cabinet's decision to give a push to growth with production linked incentive schemes.

The incomplete code is as follows:

```
def count_words(filename):                  # Reference  A
    bigwords=0                              # to store the count of big words
    with open(filename,"r") as f:
        ----------                          # Fill_ Line 2
        ----------                          # Fill_ Line 3
        for w in words:
            ---------- :                    # Fill_ Line4A
                ----------                  # Fill_ Line4B
    return bigwords, len(words)             # Reference B
#_main_
----------                                  # Fill_ Line1
print("Total number of words:",count)       # Reference C
print("No. of big words;",big)              # Reference  D
```

Contd...3

(a) Complete Fill_Line1 so that function count_words() is called. Refer to Reference lines (A,B,C,D). 1

(b) Complete Fill_Line2 so that all the contents of the open file are read into a variable data. 1

(c) Complete Fill_ Line3 so that individual words are extracted from the read data and stored in a list namely words. 1

(d) Complete Fill_Line4A, Fill_Line4B so that count of words having length more than eight characters is calculated in the variable bigwords. 1

(e) After completing the code , what will be the output produced ? 1

PART-B

Section I

24. Evaluate the following expressions:
(a)6*3+4**2//5-8 (b) 10>5 and 7>12 or not 18>3 2

25. What is the difference between "r" and "r+" ? Explain with example 2

OR

What is the difference between "r" and "rb"? Explain with example 2

26. Which Python libraries/modules need to be imported to use the following functions: 2
(a)ceil() (b) fabs() (c) bool() (d) degrees()

27. Differentiate between actual parameter(s) and formal parameter(s) with a suitable example for each. 2

OR

Explain the use of global key word used in a function with the help of a suitable example. 2

28. Rewrite the following code in Python after removing all syntax error(s).Underline each correction don in the code. 2

```
Value=30
for VAL in range(0, Value)
    If VAL%4==0:
        print(VAL*4)
    Elseif VAL%5==0:
        print(VAL+3)
    else
        print(VAL+10)
```

29. What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO. 2

```
Import random
AR=[20,30,40,50,60,70]
FROM=random.randint(1,3)
TO=random.randint(2,4)
for k in range(FROM,TO+1):
    print( AR[k],end="#")
```

(i)	10#40#70#	(ii)	30#40#50#
(iii)	50#60#70#	(iv)	40#50#70#

30. What is a python module? What is its significance? 2

31. What are docstrings? How are they useful? 2

32. What is the utility of : (i) default arguments (ii) keyword arguments? 2

33. Find and write the output of the following python code: 2

```
def determine(s):
    d={"UPPER":0,"LOWER":0}
    for c in s:
        if c.isupper():
            d["UPPER"]+=1
        elif c.islower():
            d["LOWER"]+=1
        else:
            pass
    print("Upper case count : ", d["UPPER"]
    print("Lower case count : ",d["LOWER"]
determine('These are HAPPY Times')
```

Section II

34.Write a function Lshift(Arr,n) in Python , which accepts a list Arr of numbers and n is a numeric value by which all elements of the list are shifted to left? 3

Sample Input Data of the list

Arr=[10,20,30,40,12,11], n=2

Output

Arr=[30,40,12,11,10,20]

35. A file Answer.txt contains the text as shown below. Write a function to remove all the lines that contain the character 'a' in this file and write other lines into another file. 3

File: Answer.txt

Letter 'a' is a wonderful letter.

It is impossible to think of a sentence without it.

We know this will never occur.

How mediocre our world would b without this single most powerful letter.

Newly created file should contains

We know this will never occur.

How mediocre our world would b without this single most powerful letter.

OR

Write a method/function AEDISP() in python to read lines from a text file WRITER.TXT , and display those lines, which are starting either with A or starting with E. 3

36. Write a function that accept two parameters: a dictionary and a number, and prints only the keys that have values more than the passed number. 3

37.Write a program that uses a a function called find_in_list() to check for the position of the first occurrence of v in the list passed as parameter (lst) or -1 if not found. The header for the function is given below: 3

```
def find_in_list(lst,v):
 """ lst-a list
 v- a value that may or may not be in the list """
```

OR

Write a program that takes any two lists L and M of the same size and adds their elements together to form a new list N whose elements are sums of the corresponding elements in L and M. e.g ., if L=[3,1,4] and M=[1,5,9], then N should be equal [4,6,13] 3

Section III

38. Do the following according to the instructions given below:

(a) Create a dictionary whose keys are month names and whose values are the number of days in the corresponding months. 1

(b) Ask the user to enter a month name and use the dictionary to tell them how many days are in the month. 1

(c) Print out all of the keys in alphabetical order. 1

(d) Print out all of the month with 31 days. 1

(e) Pint out the (key-value) pairs sorted by the number o days in each month. 1

39. Following is an incomplete code for a binary file namely Mydata.dat . complete the code by filling the blanks so that one can open, read and display the content of the file.

```
----------------------------------------  # Line 1
sqlist=list
 for k in range(10):
     sqlist.append(k*k)
fout=----------------------------------  # Line 2
----------------------------------------  # Line 3
fout.close()
fin=-----------------------------------  # Line 4
----------------------------------------  # Line 5
fin.close()
print("Data from file:",mylist)
```

(a) Complete Line 1 for Python library. 1

(b) Complete Line 2 for opening file for writing 1

(c) Complete Line 3 so that the list created in the code, namely sqlist, is written in the open file. 1

(d) Complete Line 4 for reading in the file object fin. 1

(e) Complete Line 5 so that the contents of the open file in the file handle fin are read in a list namely mylist. 1

40. A binary file "Book.dat" has structure [BookNo, Book_Name, Author,Price]. 5

(a) Write a user defined function CreateFile() to input data for a record and add to Book.dat.

(b) Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat".

OR

A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage). Write a function countrec() in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%. 5

DELHI PUBLIC SCHOOL, BHILAI

DATE : 16.09 .2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS : XII **Sub. : ECONOMICS** **Max. Marks : 80**

General Instructions-

- All questions are compulsory.
- 3 Marks questions should be answered in about 60 words.
- 4 Marks questions should be answered in about 80 words.
- 6 Marks questions should be answered in about 110-120 words.

SECTION- A [Macroeconomics]

1. M1 in the money supply refers to- (1)
   (a) Currency+ Demand deposits+ other Deposit with RBI (b) Post Office Saving Deposits
   (c) Time deposits with Bank (d) All of the above
2. Who regulates Money Supply- (1)
   (a) Govt. of India (b) Reserve bank of India (c) Commercial Bank (d) Planning commission
3. Savers Suffers as inflation rises to 10%, which function of money is most involved in the statement- (1)
   (a) Medium of exchange (b) Unit of account (c) Store of value (d) Transfer of value
4. Which of the following statement is not true for Fiscal Deficit? A fiscal Deficit- (1)
   (a) Represent the borrowing of the govt.
   (b) Is the difference between Total expenditure and total receipts of the govt.
   (c) Is the difference between Total expenditure and total receipts other than borrowing
   (d) Increases the future liabilities of the govt.
5. The Govt. Budget has a revenue deficit. This gets financed by- (1)
   (A) Borrowing (B) Disinvestment (C) Tax revenue (D) Indirect taxes
   (a) A and D (b) C and D (c) A and B (d) C and D
6. If the exchange rate changes from 1 = 50 to 1= 40, the money is- (1)
   (a) Depreciated (b) appreciated (c) Devaluated (d) None
7. When a country's demand for a foreign currency increases- (1)
   (a) The domestic currency depreciated (b) The foreign currency depreciated
   (c) The domestic currency appreciates (d) None of these
8. A country's balance of trade is Rs. (-50) crores and the value of import of goods is Rs. 200 crores. Find out the value of export of goods- (1)
   (a) ₹ 100 crore (b) ₹ 150 crore (c) ₹ 250 crore (d) 50 crores
9. If a country is having more imports than exports in the value terms it can be said that country is having- (1)
   (a) Deficit under BOP (b) Deficit under BOT (c) Surplus under BOT (d)Surplus under BOP
10. Balance of Payment can be removed through- (1)
    (a) Devaluation of currency (b) Export Promotion (c) Import substitution (d) All of these
11. Explain derivative functions of money. (3)
12. Explain 'lander of last resort' function of central bank. (3)

    OR

    Discuss 'Bank of issue' function of RBI
13. Explain LRR and Margin requirement measures of money as qualitative tools. (4)
14. Discuss Plan and Non-Plan expenditures under govt. budget. (4)

    OR

    Explain components of Budget receipts under govt. Budget.
15. Discuss the determination of foreign exchange rate with help of diagram. (4)

Contd...2

16. What are the implications of fiscal deficit? Write various measures to control it. (3+3=6)

17. What is difference between Balance of payment and Balance of Trade? Discuss the causes of disequilibrium in BOP. (2+4=6)

OR

Discuss the current account of Balance of payment. How is it different from Capital account? (3+3=6)

SECTION-B [Indian Economy]

18. Gender- bias in the society on the eve of independence was indicated by- (1)
(a) Mortality rate (b) Literacy rate (c) Death rate (d) Life expectancy

19. Which of following is not a long period objective of planning in India- (1)
(b) GDP growth (b) Full employment (c) Better quality of life (d) Equitable distribution

20. Price support policy focuses on- (1)
(a) Stability of form output (b) High price of farm output
(c) Stability of income from farming (d) stability of farm productivity

21. Owing to agrarian reforms, productivity in the agriculture sector has tended to- (1)
(a) Rise (b) Fall (c) remain constant (d) None of these

22. .....is a disposal of equity of public sector units in the market. (1)
(a) Globalization (b) Privatization (c) Disinvestment (d) Liberalization

23. Mr. X is relatively richer than Mr. Y. But both can be absolutely poor. This statement is- (1)
(a) True (b) False (c) Both (d) None

24. Choose the correct match from the following- (1)

Scheme	**Launching Year**
a- SGRY	(i)2005
b- SJSRRY-	(ii)2001
c- SGSY-	(iii)1997
d- MGNREGA-	(iv)1999

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

25. Monetary benefits of education.....the cost of production. (1)
(a) Exceeds (b) are less than the (c) Equal (d) None

26. The expenditure by the govt. on education is expressed as- (1)
(a) % of total govt. expenditure (b) % of GDP (c) Both (d) None

27. .....five year plan recognized the importance of Human Capital (1)
(a) Seventh (b) Third (c) Eight (d) Sixth

28. Discuss how an investment in Human Capital contributes to economic growth. (3)

OR

Give cause and effect relationship between human capital and economic growth.

29. Suppose you are a resident of a village. Suggest a few measures to tackle the problem of poverty. (3)

30. Discuss any two sources of Human capital formation. (4)

31. Explain any two wage employment Yojana of govt. of India. Also write its achievements in removing poverty. (4)

32. Explain the various elements of IPR 1956. (4)

OR

What were the salient features of India's pre-independence occupational structure?

33. Explain the Industrial sector reform and fiscal reform under liberalization process. (3+3=6)

OR

Write Short Notes on- (A) Outsourcing (B) WTO (C) Globalization (2+2+2)

34. What objectives did the British intend to achieve through their policies of infrastructure development in India. (6)

DELHI PUBLIC SCHOOL, BHILAI

DATE : 16.09.2021 **MID TERM EXAMINATION (2021-22)** **Time : 3 Hours**

CLASS : XII **SUB. – BIOLOGY** **Max. Marks : 70**

General Instructions:

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

SECTION : A

Q.1 Where do the signals for parturition arise from? (1)

Q.2 Name the part of the flower which the tassels of the corn cob represent. (1)

Q.3 Write the function of acrosome of human sperm. (1)

Q.4 Give an example of a plant, where the remnant of nucellus is found in the seeds? What is it called? (1)

Q.5 Predict the effect, if the codon UAU coding for an amino acid at the 25th position of a polypeptide of 50 amino acids, is mutated to UAA. (1)

Q.6 How many meiotic divisions are required to produce 88 seeds in a guava fruit? (1)

Q.7 State a difference between a gene and allele. (1)

Q.8 Give an example of each-type (1)

(a) Female XX with male XO (b) Female ZW with male ZZ

Q.9 A male honey bee has 16 chromosomes whereas female has 32 chromosomes. Give one reason. (1)

Q.10 Name two amino acids with a single codon. (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.

Q.11 Assertion (A) : The nuclear (mitotic) divisions in the functional megaspore to form an embryo sac in angiosperms are strictly free-nuclear.
Reason (R) : Cell wall formation starts only at the 8 nucleate stage leading to the organisation of the typical female gametophyte. (1)

OR

Assertion (A) : The endometrium of uterus undergoes cyclical changes during menstrual cycle.
Reason (R) : Implantation of the blastocyst occurs at the endomentrium lining.

Q.12 Assertion (A) : In eukaryotes, the primary RNA transcript has to undergo splicing.
Reason (R) : In eukaryotes, the primary RNA transcript has non-coding sequences called introns. (1)

Q.13 Assertion (A) : Apple and cashew are false fruits.
Reason (R) : Thalamus contributes to fruit formation in apple and cashew. (1)

Q.14 Assertion (A) : Addition or deletion of a single base in a cistron, produces an entirely new polypeptide.
Reason (R) : Addition or deletion of a single base leads to a change in the reading frame from the point. (1)

Contd...2

Q.15 Erwin chargaff was one of those men, making two discoveries that led James Watson and Francis Crick to the double helix structure of DNA. At first Chargaff noticed that DNA whether taken from a plant or animal-contained equal amounts of adenine and thymine and equal amounts of cytosine and guanine. These equalities provides clues into the chemical pairing that make up the double helix. In addition Chargaff also found that amounts of guanine, cytosine, adenine and thymine vary by species are indication that DNA., not protein might be the genetic material for life. **(4)**

(i) Thymine is also called
(a) 2 methyl uracil (b) 3 methyl uracil (c) 4 methyl uracil (d) 5 methyl uracil

(ii) In DNA 20% bases are adenine. What percentage of bases are pyrimidines?
(a) 30% (b) 60% (c) 50% (d) 20%

(iii) In sea urchin DNA which is double standard 17% of the bases were shown to be cytosine. The percentages of the other three bases expected to be present in this DNA are
(a) G/34%, A/24.5%, T/24.5% (b) G/17%, A/16.5, T/32.5%
(c) G/17%, A/33%, T/33% (d) G/8.5%, A/50%, T/24.5%

(iv) The length of DNA in a human cell is about
(a) 2.3 m (b) 2.4 m (c) 2.2 m (d) 2.0 m

(v) Assertion (A): Adenine cannot pair with cytosine.
Reason (R) : Adenine and cytosine do not have complementarity between their respective hydrogen donor and hydrogen acceptor sites.
(a) If both A and R are true and R is the correct explanation of A.
(b) If both A and R are true, but R is not the correct explanation of A.
(c) If A is true, but R is false.
(d) If both A and R are false.

Q.16 Read the following and answer **any four** questions from 16 (i) to 16 (v) given below :
It was Galton (1883) who suggested that characters such as height, mental capabilities, etc. of humans show a continuous range of variations in a population. Such quantitative characters have been found to be controlled by three or more genes (hence, polygenic) and their effects have been found to be cumulative or additive. **(4)**

Human skin colour is controlled by three genes, A, B, and C, where darkness is dominant over light/fair skin colour. Mating between the darkest (AABBCC) and the fairest (aabbcc) skin coloured human beings results in an intermediate skin coloured individual. When an F_2 generations is raised and the data plotted graphically, a bell-shaped curved results.

(i) Identify the genotypes that will have the intermediate skin colour
(1) AABbcc (2) AaBbCc (3) AaBBcc
(4) AABcCc (5) AabbCC (6) aaBBCC
(a) 1,2,3 and 5 (b) 2 only (c) 4, 5 and 6 (d) 5 only

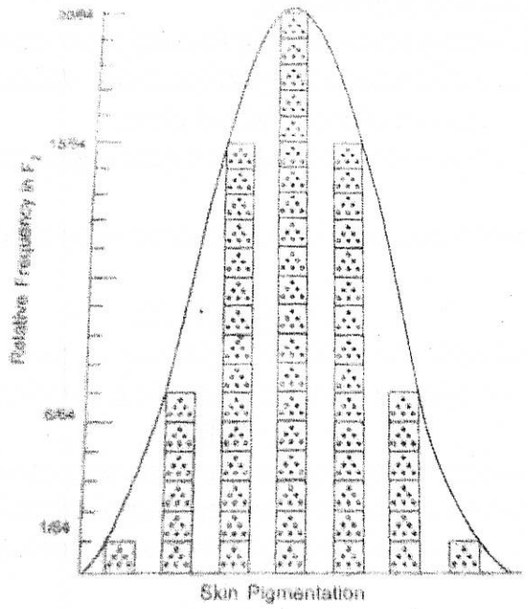
(ii) How many types of gametes will be formed by an individual of genotype AaBbCc?
(a) 4 (b) 6 (c) 8 (d) 16

(iii) Polygenic inheritance differs from multiple alleles in that
(a) a character is controlled by three or more genes.
(b) the phenotype reflects the additive effect of each of the dominant alleles.
(c) The characters controlled by polygenes are quantitative.
(d) all of these

(iv) The phenotypic ratio of F2 progeny of a cross involving a polygenic trait controlled by three separate genes.
(a) 1 : 6 : 20 : 15 : 15 : 6 : 1 (b) 1 : 6 : 15 : 20 : 15 : 6 : 1
(c) 1 : 8 : 15 : 16 : 15 : 8 : 1 (d) 1 : 7 : 14 : 20 : 14 : 7 : 1

Contd...3

(v) The relative frequency of F2 progeny in a polygenic cross is plotted against the extent of phenotypic expression. The following conclusions can be drawn by studying the graph.



(I) Few individuals fall into the parental categories.
(II) The phenotype is dependent on the environment only, say exposure to sunlight.
(III) The expression level of the phenotype is dependent on the number of contributive alleles present in the individual.
(IV) The character is quantitative.

Select the option containing the correct statements.

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

SECTION : B

Q.17 Where is sporopollenin present in plants? State its significance with reference to its chemical nature. (2)

Q.18 Write the effect of the high concentration of LH on mature Graafian Follicle. (2)

Q.19 State what are Mendelian disorders. Both thalassemia and colour blindness are categorized as Mendelian disorders. Justify. (2)

Q.20 Work out a cross to find out the genotype of a tall pea plant. Name the type of cross. (2)

OR

With the help of one example, explain the phenomena of co-dominance and multiple allelism. (2)

Q.21 What are 'SNPs'? State any two ways the discovery of SNPs can be of importance to humans. (2)

Q.22 What is aminoacylation? State its significance. (2)

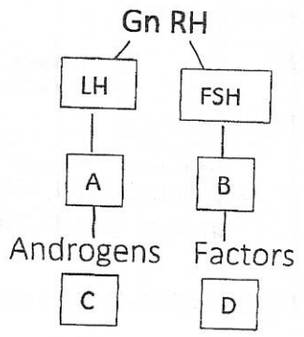
OR

State the functions of ribozyme and release factor in protein synthesis respectively. (2)

Q.23 Draw a well labelled diagram of a fertilized embryo sac of a dicot flower. (2)

Q.24 Why are some seeds of Citrus referred to as polyembryonic? How are they formed? (2)

Q.25 Identify A, B, C and D with referred to gametogenesis in humans, in the flow chart given below:



Contd...4

SECTION : C

Q.26 How is the length of DNA usually calculated? Give an example. **(3)**

OR

Describe the structure of a nucleosome.

Q.27 Explain the post pollination event leading to seed production in angiosperms. (3)

Q.28 A couple with normal vision bear a colourblind child. Work out a cross to show how it is possible and mention the sex of the affected child. (3)

Q.29 Name the stage of human embryo at which it gets implanted. Explain the process of implantation. (3)

Q.30 Describe how lac operon operates in the absence of an inducer. (3)

SECTION : D

Q.31 (a) Represent schematically the process of spermatogenesis that occurs in a human male.

(b) How does it differ markedly from oogenesis in a human female? **(5)**

OR

(a) Differentiate between autogamy, geitonogamy and xenogamy.

(b) Differentiate between apocarpous and syncarpous pistil with an example of each.

Q.32 Explain the process of replication of DNA with the help of a replication fork. (5)

OR

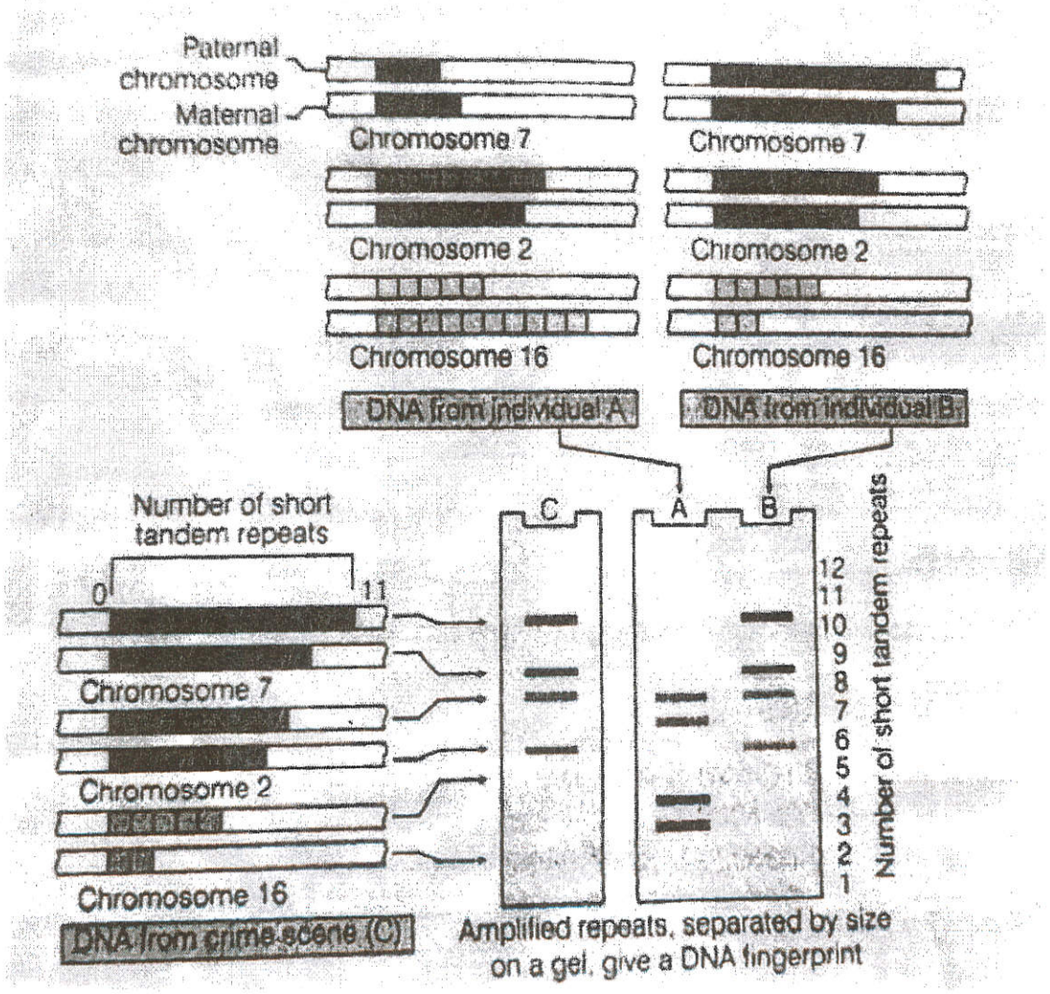
What is the inheritance pattern observed in the size of starch grains and seed shape of Pisum sativum? Work out the monohybrid cross showing the above traits. How does this pattern of inheritance deviate from that of Mendelian Law of Dominance?

Q.33 (i) What are linked genes?

(ii) Why T.H. Morgan selected fruit fly (Drosophila) for his experiment?

(iii) How are linkage and crossing over opposite to each other? (5)

OR



The above given figure shows a very widely used technique for paternity disputes. Explain this technique.