DAV PUBLIC/ MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION 2020-21
PAPER-I

CLASS: XII   **MAXIMUM MARK: 35**
SUBJECT: BUSINESS STUDIES   **TIME: 1 ½ HOURS**

1	Which is the most crucial step in planning process?	1
2	Which term denotes "The number of subordinates that can be effectively managed by a superior?	1
3	To meet the objectives of the firm the management of A. Ltd. offer employment to physically challenged persons . Identity the organizational objective it is trying to achieve.	1
4	Name the type of 'organisational structure' which promotes efficiency in utilisation of manpower.	1
5	"A collection of diverse individuals with different needs but working towards fulfilling the common organizational goals" this statement highlights which characteristic of management?	1
6	Explain the features of management that do not establish it as a profession.	3
7	With change in the consumption habits of people, Joy, who was running, a sweets shop shifted to chocolate business. On the eve of Durga Puja he offered chocolates in attractive packages at reasonable prices. He anticipated huge demand and created a website chocolove.com for taking orders online. He got lot of orders online and earned huge profit by selling chocolates. Identify and explain the dimensions of business environment discussed in the above case.	3
8	Explain any three characteristics of Business Environment.	3
9	Explain why is it said that principles of management are 'mainly behavioural' and 'contingent' in nature. Also explain how principles of management 'provide managers with useful insights into reality' and 'helps in thoughtful decision-making'.	4
10	Discuss the following techniques of Scientific Work Study: (a) Time Study (b) Motion Study (c) Fatigue Study (d) Method Study (e) Simplification and standardisation of work.	5
11	Explain the first six steps taken by management in the planning process.	6
12	Is planning actually worth the huge costs involved? Explain.	6

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CLASS: XII   **MAXIMUM MARK: 35**
SUBJECT: BUSINESS STUDIES   **TIME: 1 ½ HOURS**

1	It is described as the managerial function of filling and keeping filled the positions in the organization structure. Which function of management is referred here?	1
2	Every manager from top executive to superior performs the function of directing. Which characteristic of directing is referred here?	1
3	What is meant by 'financial management'?	1
4	A textile company is diversifying and starting a steel manufacturing plant. State with reason the effect of diversification on the fixed capital requirements of the company.	1
5	Name the kinds of issue in which shares are offered to existing shareholder.	1
6	Explain first three steps in the process of controlling.	3
7	'Moon Light Pvt. Ltd. was manufacturing good quality LED bulbs and catering to local market. The current production of the company is 1000 bulbs a day. Rohan, the marketing manager of the company surveyed the market and decided to supply the bulbs to five-star-hotels also. He anticipated the higher demand in future and decided to buy a sophisticated machine to further improve the quality and quantity of the bulbs produced. Identify the factor affecting fixed capital requirements of the company.	3
8	'Efficient functioning of stock exchange creates a conducive climate for active and growing primary market for new issues as well as for an active and healthy secondary market.' In the light of this statement state any three functions of a stock exchange.	3
9	State any four points that highlight the importance of controlling.	4
10	The board of Directors has asked you to design the capital structure of the company. Explain any five factors that you would consider while doing so.	5
11	What are the advantages of training to the individual and to the organisation?	6
12	'Super Power Ltd.' was an efficient consultancy company. To get the business the team leader and his team used to travel to different states to give presentation to their clients. As per the policy of the company, the team leader used to travel by air, whereas his team travelled by road/train. It was not only time consuming but also at times forced female team members to travel alone. As a result, the subordinates were not acting in a desired manner to achieve organizational goals. The Sr. Manager came to know about it. He called the team leader, discussed the matter with him and changed the travel policy of the company. It was decided that all the members including the leader would travel together in future and would usefully utilize the travelling time in discussion with the subordinates about the presentation to be given to the clients. This made a positive impact and every member of the team started acting in a manner as desired by the team leader. Name the element and explain the features of the element of the function of management used by the Sr. Manager	6

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CLASS: XII

SUBJECT: ACCOUNTANCY (PAPER – I)

MAXIMUM MARKS: 35

TIME: $1\frac{1}{2}$ HOURS

1. Differentiate between Receipts and Payments Account and Income and Expenditure Account on the basis of 'Non-cash items'. **1**

2. Partner A granted loan of ₹ 40,000 to the firm in the beginning of the year. Interest on loan is @ 10% per annum. Pass the necessary journal entries, with respect to interest on partner's loan, in the books of firm. **1**

3. Capital invested in a firm is ₹ 3,00,000. Normal rate of return is 10%. Average profits of the firm are ₹ 41,000 (after an abnormal loss of ₹ 20,000). Calculate goodwill at five times the super profits. **1**

4. A and B are partners in a firm sharing profits in 3:2 ratio. They admitted C as a new partner. A surrendered 1/3 of his share in favour of C and B surrendered 1/4 of his share in favour of C. Calculate new profit sharing ratio. **1**

5. A, B and C are partners sharing profits and losses in the ratio of 2:3:4. They decided to share future profits and losses in the ratio of 4:3:2. They also decided to record the effect of the following without affecting their values: **3**

General Reserve	₹ 40,000
Profit & Loss A/c	₹ 20,000
Advertisement Suspense A/c	₹ 15,000

You are required to give the necessary single journal entry.

6. A, B and C are partners in a firm having fixed capitals of ₹ 80,000; ₹ 40,000 and ₹ 50,000 respectively sharing profits as 7:6:4. The rate of interest on capital was agreed at 10% p.a. but was wrongly credited to them at 12% p.a. Pass necessary adjustment entry to adjust the balances of partners' capital accounts. **4**

7. Define Goodwill. Explain briefly any three factors affecting the value of Goodwill. **4**

8. From the information given below prepare Income & Expenditure Account for a Club. **6**

Receipts & Payments Account for the year ended 31st March, 2020

Receipts	Amount Rs.	Payments	Amount Rs.
To Balance b/d		By Salaries	15,000
Cash 2,000			
Bank 10,000	12,000		
To Subscription	25,000	By Rent	6,000
To Rent for Hall	39,000	By Stationery	18,000
To Sale of old newspapers	1,000	By Bicycle purchased	10,000
To Donations for Buildings	20,000	By Investments	20,000
To Government Grant	2,000	By Charity	5,000
		By Newspapers & Journals	2,000
		By Balance c/d	
		Cash 3,000	
		Bank 20,000	23,000
	99,000		99,000

Additional information:
(a) Subscription due for the year 2019-2020 Rs. 12,000.
(b) Outstanding Rent Rs. 2,000.
(c) Bicycle is depreciated by 10%.

9. The partnership agreement between M and G provides that **6**
(i) Profits will be shared equally.
(ii) M will be allowed a salary of ₹ 400 per month.
(iii) G who manages the sales department will be allowed a commission equal to 10% of the net profits, after allowing M's salary.
(iv) 7% interest will be allowed on partner's fixed capital.
(v) 5% interest will be charged on partner's annual drawings.
(vi) The fixed capitals of M and G are ₹ 1,00,000 and ₹ 80,000 respectively.
Their annual drawings were ₹ 16,000 and ₹ 14,000 respectively.
The net profit for the year ending 31st March, 2020 amounted to ₹ 40,000.
Prepare firm's Profit & Loss Appropriation Account.

10. A and B were partners in a firm sharing profits in the ratio of 3:1. On 1st April, 2020 they admitted C as a new partner for 1/5th share in profits of the firm. On the date of C's admission the Balance Sheet of A and B showed a General Reserve of ₹ 1,20,000, a debit balance of ₹ 60,000 in Profit and Loss A/c and Working Compensation Reserve of ₹ 1,50,000. The following was agreed upon on C's admission: **8**
(i) C will bring ₹ 1,50,000 as his capital and his share of goodwill premium in cash.
(ii) Goodwill of the firm be valued at ₹ 2,40,000.
(iii) There was a claim of Workmen Compensation for ₹ 1,70,000.
(iv) The partners decided to share future profits in the ratio of 3:1:1.
Pass the necessary journal entries for the above on C's admission.

CLASS: XII

MAXIMUM MARKS: 35

SUBJECT: ACCOUNTANCY (PAPER-II)   TIME: $1\frac{1}{2}$ HOURS

1. A, B and C were partners sharing profits in the ratio of 3/8, 1/2 and 1/8. A retires   1
and surrenders 2/3 of his share in favour of B and remaining in favour of C.
Calculate new ratio.

2. State two basis for determination of Profits from the date of last Balance Sheet   1
to the date of death of a partner.

3. Differentiate between Revaluation Account and Realisation Account on the basis   1
of 'Object of Preparation'.

4. What is meant by 'Minimum Subscription'?   1

5. 4,000 shares of ₹ 10 each were issued to the Promoters for their services. Pass   1
the journal entry in the books of Company.

6. A, B and C were partners in a firm sharing profits in 3:2:1 ratio. The firm closes   3
its books on 31st March every year. B died on 12-06-2020. On B's death the
goodwill of the firm was valued at ₹ 60,000. On B's death his share in the
profits of the firm till the time of his death was to be calculated on the basis of
previous year's profit which was ₹ 1,50,000. Calculate B's share in the profit of
the firm.
Pass necessary journal entries for the treatment of goodwill and B's share of
profit at the time of his death.

7. Write any three differences between Equity Shares and Preference Shares.   3

8. When a firm is dissolved, assets are realised, liabilities are paid and the balance,   4
if any, is distributed among the partners in their profit-sharing ratio. The books
of the firm are closed on dissolution. Which accounts are prepared at the time of
dissolution of a partnership firm? Explain in brief.

9. What journal entries would you pass for the following transactions on the   6
dissolution of the firm where A and B are partners-
(a) Dissolution expenses amounted to ₹ 1,000 was paid by A.
(b) A agreed to pay his wife's loan amounting to ₹ 10,000.
(c) B's loan paid off ₹ 10,000.
(d) ₹ 10,000 unrecorded typewriter taken over by A at ₹ 7,000.
(e) Realisation expenses ₹ 3,400 were paid by A for which he was allowed
₹ 3,000.
(f) Profit on realisation ₹ 4,800 was distributed between A and B in the ratio 5:3.

10. A, B and C were in partnership sharing profits and losses in the ratio of 3:2:1.   6
Their balance sheets as at 31st March, 2020 was as under

Balance Sheet as at 31st March, 2020				
Liabilities	Amount ₹		Assets	Amount ₹
Capital A/cs			Cash in hand	2,000
A 40,000			Cash at bank	250
B 20,000			Sundry Debtors	20,000
C 10,000	70,000		Stock	11,800
Creditors	27,000		Land and Buildings	50,000
Bills Payable	18,000		Plant and Machinery	24,000
Contingency Reserve	12,000		Loose Tools	5,750
Profit and Loss A/c	6,000		Furniture and Fixtures	8,200
			Trademarks	2,000
			Advertisement Suspense A/c	9,000
	1,33,000			1,33,000

On the same date, B retired and the following terms were agreed upon
(i) Goodwill was valued at ₹ 12,000.
(ii) Plant and Machinery and loose tools are to be valued at 20% less than their
book value.
(iii) Land and Buildings be decreased to ₹ 40,000.
(iv) Furniture and Fixtures to be appreciated by 15% and creditors to be reduced
by ₹ 620.
(v) ₹ 1,300 to be paid to B immediately and the balance to be transferred to his
loan account.
You are required to prepare Revaluation Account, Partners' Capital Accounts
and the Balance Sheet of the firm as at 31st March, 2020.

11. X Ltd. was registered with an authorised capital of ₹ 20,00,000 in   8
₹ 10 per equity share. It invited applications for issuing 1,00,000 equity shares at
a premium of ₹ 2 per share. The amount was payable as follows:
On application   ₹ 4 per share (including premium)
On allotment   ₹ 3 per share
Balance on 1st and Final call.
Applications were received for 1,30,000 shares. Applications for 10,000 shares
were rejected and the application money received on them was refunded.
Pro-rata allotment was made to the remaining applications. Amount overpaid on
these applications was adjusted towards the amount due on allotment. Sujit, who
has applied for 1,200 shares, failed to pay the allotment and call money. The
company forfeited his shares, out of which 800 shares were reissued to Bikash
at ₹ 9 per share fully paid up.
You are required to pass the Journal Entries in the books of X Ltd.

DAV PUBLIC/ MODEL SCHOOLS, WEST BENGAL ZONE
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SESSION -2020-21
PAPER 1

CLASS -XII   MAXIMUM MARK: 35

SUBJECT-PHYSICAL EDUCATION   TIME-1HOUR 30MINS

1.	What is Planning?	1
2	What is the need of Planning?	1
3	Mention the committees which work before the Tournament.	1
4	What is the role of Transport Committee in conducting a Tournament?	1
5	Define a Knock Out Tournament.	1
6	What do mean by a Fixture?	1
7	What are the features of Simple Carbohydrate?	1
8	Mention the functions of Protein.	1
9	Explain Hypokalemia.	1
10	Mention the functions of Zinc.	1
11	Distinguish between Knock Out and League Tournaments.	3
12	Describe the method of Bye allotment in a Knock Out Fixture.	3
13	Write a short note on Food Myths.	3
14	What is Food Intolerance?	3
15	Explain the Pitfalls of Dieting.	3
16	.Elucidate the Methods of Maintaining Healthy Body Weight.	5
17	Draw a Knock Out cum League Fixture with 20 teams.	5

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CLASS -XII   MAXIMUM MARK: 35

SUBJECT-PHYSICAL EDUCATION   TIME-1HOUR 30MINS

1.	Mention the causes of Obesity.	1
2	Mention the types of Asanas with one example for each.	1
3	What are the types of Diabetes?	1
4	Define Scoliosis.	1
5	What do mean by Disability?	1
6	Briefly explain Cognitive Disability.	1
7	Jot down the Basic Movements observed in Early Childhood.	1
8	Write down the causes of Knock Knee.	1
9	Mention the various type of Disorders.	1
10	What are the symptoms of OCD?	1
11	Describe the causes of Disabilities.	3
12	Briefly narrate the exercises to correct Round Shoulder.	3
13	Mention the symptoms of ADHD in adults.	3
14	Narrate the causes of Asthma.	3
15	Describe the Disability Etiquettes.	3
16	Elucidate the causes of less participation of women in Sports in India.	5
17	Mention the Asanas those prevent Hypertension. Briefly describe the procedure, benefits and contraindications of Vajrasana.	5

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DAV PUBLIC/MODEL SCHOOLS , WEST BENGAL ZONE
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SESSION 2020-21

CLASS: XII

MAXIMUM MARKS:35

SUBJECT:PHYSICS

TIME:1 ½ HOURS

PAPER I

Q1. Two conducting wires X and Y , such that diameter of X is half that of Y and the number density of electrons in Y is three times that in X are joined in series across a battery . Find the ratio of drift speed of electron in two wires.   2

OR

A parallel combination of two cells of emf's e_1 and e_2 and internal resistances r_1 and r_2 is used to supply current to a load of resistance R.Find the expression for the current through the load in terms of e_1, e_2 , r_1 and r_2

Q2. A point charge Q is placed at point O as shown in the figure . Is the potential difference V_A-V_B positive , negative or zero?Give reason.   2

O--------------------A------------B

+Q
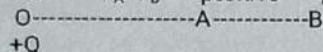
Q3. Two charges q and -3q are placed fixed on X- axis separated by a distance d. Where should a third charge 2q be placed such that it will not experience any force?   2

OR

Define electric dipole moment. An electric dipole with dipole moment $\vec{p}$ is placed in an uniform electric field $\vec{E}$. Calculate the amount of work done in rotating it from the position of unstable equilibrium to stable equilibrium position.   2

Q4. Find the wavelength of e.m waves of frequency 4×10^9 Hz in free space . Give two applications of these waves.   2

Q5. In a plane electromagnetic wave, the electric field oscillates sinusoidally at a frequency of 2.0×10^{10} Hz and amplitude 48 V/m.   2
a) What is the wavelength of a wave?
b) What is the amplitude of the oscillating magnetic field?

Q6. Define the term "drift velocity" of charge carriers in a current carrying conductor. Obtain the expression for current density in terms of relaxation time.   3

OR

Define the term relaxation time of the free electrons drifting in a conductor . Establish the relation between electrical resistivity and relaxation time.

Q7. a)State Kirchhoff's voltage law for electrical networks .What does the law justifies?   3
b) Using Kirchhoff's rules , determine i) the voltage drop across the unknown resistor R and ii) the current flowing in the arm EF in the circuit as shown.
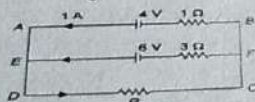

Q8. a)Use Gauss's law to derive the expression for the electric field $\vec{E}$ due to a straight uniformly charged infinite line charge of charge density λ C/m.   3
b)Draw a graph to show the variation of E with perpendicular distance r from the line charge.

Q9. a) An electromagnetic wave is travelling in a medium with a velocity $\vec{v} = v\hat{i}$. The electric field oscillations of the electromagnetic wave are along the Y-axis. Identify the direction in which the magnetic field oscillations of the electromagnetic waves are taking place. Write the equation for the given electromagnetic wave.   3
b) Mention two important properties of an electromagnetic wave.

Q10. a)Two point charges -q and +q are located at points (0,0,-a) and (0,0,a) respectively. What is the electrostatic potential at the points (0,0,z) and (x,y,0)?   3
b) Draw equipotential surfaces for an electric dipole.

Q11. a) State the principle of a potentiometer. Draw a circuit diagram to show comparison of emf of two primary cells.   2
b) Why is a potentiometer superior to a voltmeter?   1
c) In a meter bridge , the null point is found at a distance of 60.0 cm from end A . If now a resistance of 5Ω is connected in series with S, the null point occurs at 50 cm. Determine the values of R and S.   2
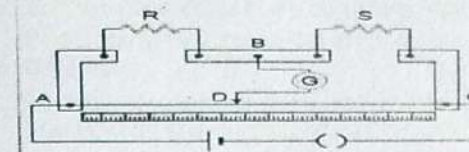
Q12. a) Derive an expression for the energy stored in a parallel plate capacitor of capacitance C with air as medium between its plates having charges Q and -Q. Show that this energy can be expressed in terms of electric field as $\varepsilon_0 E^2 Ad/2$ where A is the area of each plate and d is separation between the plates. .   3
b) How will the energy stored in a fully charged capacitor change when the separation between the plates is doubled and a dielectric medium of dielectric constant 4 is introduced between the plates?   2

Or

a) Derive an expression for the electric field intensity at a point on the axial line of an electric dipole of dipole moment $\vec{p}$ and dipole length 2a. What is the direction of this field?   2
b) Three identical capacitors C_1, C_2 and C_3 of capacitance 6µF each are connected to a 12 V battery as shown in the figure.   3
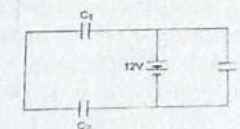

Find
i) charge on each capacitor
ii) equivalent capacitance of the network
iii) energy stored in the network of capacitors.

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PAPER-II

1. A long wire carries a steady current, I. First it is bent into a circular coil of one turn when the magnetic field at the centre is B_0. Then the same wire is bent to form a circular coil of smaller radius but n turns then find the magnetic field at the centre of this circular coil. **2**

Or

Magnetic field at the centre of a circular loop of area A carrying current I is B. What is the magnetic moment of this loop?

2. a) Write Biot Savart's law in vector form. **2**

b) Compare the electrostatic field given by Coulomb's law and magnetic field given by Biot Savart's law .(Any two points)

3. State Ampere's circuital law .Use it to obtain the expression for the magnetic field inside an air cored solenoid carrying a steady current I and having n number of turns per unit length. **2**

4. An electric lamp connected in series with a capacitor and an ac source is glowing with certain brightness. How does the brightness of the lamp change on reducing the i) capacitance and ii) frequency? **2**

Or

Draw the graph showing the variation of capacitive reactance with frequency of applied AC source. Explain why the reactance provided by a capacitor to an alternating current decreases with the increasing frequency?

5. a) Is induced electric field conservative/ non conservative? Give reason. **2**

b) State the law that gives the polarity of the induced emf.

6. a) Describe briefly, with the help of a labelled diagram, the working principle of a step up transformer. **3**

b) Write any two sources of energy loss in a transformer.

c) A step up transformer converts a low voltage into high voltage. Does it not violate the principle of conservation of energy? Explain.

7. State the condition for resonance to occur in a series LCR ac circuit and derive an expression for the resonant frequency. Draw the phasor diagram and a plot showing the variation of the peak current i_0 with frequency of the a.c. source . **3**

8. a) Increasing the current sensitivity may not necessarily increase the voltage sensitivity. Justify this statement. **3**

b) To increase the current sensitivity of a moving coil galvanometer by 50%, its resistance is increased so that the new resistance becomes twice its initial resistance. By what factor does its voltage sensitivity change?

9. a) How is mutual inductance of a pair of coils affected when (i) separation between the coils is increased (ii) a thin iron sheet is placed between the two coils, other factors remaining the same. Explain your answer in each case **3**

b) The current through two inductors L_1 and L_2 (where $L_2 > L_1$) is increasing with time at the same rate. Draw graphs showing the variation of the e.m.f. induced with the rate of change of current in each inductor.

10. a) A wheel with 15 metallic spokes, each 60 cm long is rotated at 360 r.p.m. in a plane normal to the horizontal component of earth's magnetic field. The angle of dip at that place is $60°$. If the e.m.f. induced between the rim of the wheel and the axle is 400mV, calculate horizontal component of earth's magnetic field at the place. How will the induced e.m.f. change if number of spokes are increased? **3**

Or

a) State Gauss's law in Magnetism. How is it different from Gauss's Law in electrostatics and why?

b) Vertical component of earth's magnetic field at a place is $\sqrt{3}$ times its horizontal component. If total intensity of earth's magnetic field at the place is 0.4 gauss, find angle of dip and horizontal component of earth's magnetic field.

11. a) When a charged particle moving with velocity $\vec{v}$ is subjected to magnetic field $\vec{B}$, the force acting on it is non-zero. Would the particle gain any energy? Give reason. **1+1+3 =5**

b) In a certain region of space, electric field $\vec{E}$ and magnetic field $\vec{B}$ are perpendicular to each other. An electron enters in the region perpendicular to the directions of both $\vec{B}$ and $\vec{E}$ and moves undeflected. Find the velocity of the electron.

c) Two parallel coaxial circular coils of equal radius R and equal number of turns N, carry equal currents I in the same direction and are separated by a distance 2R. Find the magnitude and direction of the net magnetic field produced at the midpoint of the line joining their centres.

Or

a) An electron in an atom revolves around the nucleus in an orbit. Find the magnetic moment of the revolving electron. Indicate the direction of magnetic dipole moment.

b) A horizontal wire AB of length I and mass m carries a steady current I_1, free to move in vertical plane is in equilibrium at a height of h over another parallel long wire CD carrying a steady current I_2, which is fixed in a horizontal plane . Derive the expression for the force acting per unit length on the wire AB and write the condition for which wire AB is in equilibrium.

12. a) In a rectangular conducting loop PQSR, the arm RS of length I is moveable. The loop having resistance R is kept in a uniform magnetic field B directed downward perpendicular to the plane of the loop. The arm RS is moved with a uniform speed v. deduce an expression for (i) e.m.f. induced across the arm RS (ii)the external force required to move the arm (iii)the power dissipated as heat. **5**

b) An inductor of 200mH, capacitor of 400μF and a resistor of 10 Ω are connected in series to an ac source of 50V of variable frequency. Calculate Angular frequency at which maximum power dissipation occurs in the circuit and the corresponding value of effective current.
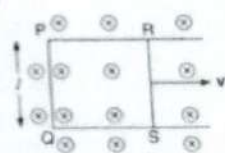
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PAPER-I

CLASS: XII **MAXIMUM MARK:35**
SUBJECT: BIOLOGY **TIME: 1 ½ HOURS**

Q1	When a tall pea plant was selfed, it produced one fourth of its progeny as dwarf. Explain with the help of a cross.	2
Q2	A woman with blood group 'O' married a man with blood group AB. Show the possible blood group of the progeny. List the alleles involved in this inheritance.	2

<div align="center">OR</div>

How does a test cross help in identifying the genotype of the organism? Explain.

Q3	What is the cause of discontinuous synthesis of DNA on one of the parental strands of DNA? What happens to these short stretches of the DNA synthesized?	2
Q4	A person has suffered a heart attack due to a floating clot in his coronary artery.	2

    a) Name the bacterium that can save him.
    b) Mention its product and its action.

Q5.	Name a microbe used for statin production. How do statin lower blood cholesterol level?	2
Q6	Explain the phenomenon of multiple alleles and co dominance by taking the example of ABO blood group in human.	3
Q7	A girl of sub normal intelligence has defective speech and also a protruding tongue. What type of genetic disorder is it? Explain the cause and the basis for this disorder to be detected.	3
Q8	Who discovered mutation? Write the scientific name of the plant he worked on. State the function of RNA polymerase during transcription.	3
Q9	How do organism like fungi, zooplankton and bears overcome the temporary, short lived climatic stressful conditions? Explain.	3
Q10	Microbes can be used to decrease the use of chemical fertilizers and pesticide. Explain how this can be accomplished.	3

<div align="center">0R</div>

How is activated sludge formed during sewage treatment?
Explain how the sludge can be used as inoculum or as a source of bio gas.

Q11	How did Hershey and Chase prove that DNA is the heredity material? Explain their experiment with diagrams.	5

<div align="center">OR</div>

Draw a labelled schematic structure of a transcription unit. Explain the function of each component of the unit in the process of transcription.

Q12.	What is "population" according to you as a biology student?	5

"The size of a population for any species is not a static parameter". Justify the statement with specific reference to fluctuations in the population density of a region in a given period of time.

<div align="center">OR</div>

A. Name and define the type of the interaction seen in each of the following examples
    a) Ascaris living in the intestine of human
    b) Wasp pollinating fig inflorencesce.
    c) Clown fish living among the tentacles of sea anemone
B. Explain the phenomenon of " Brood parasitism"

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CLASS: XII   **MAXIMUM MARK:35**
SUBJECT: BIOLOGY   **TIME: 1 ½ HOURS**

Q1	What is cleistogamy? Write one advantage and one disadvantage of it, to the plant.	2
Q2	State what is 1pomixes. Write its significance.	2
	OR	
	Why should a breeder need to emasculate a bisexual flower? Mention a condition in a flower where emasculation is not necessary.	
Q3	Mention the sites of action of the hormones GnRH and FSH during spermatogenesis in human males. Give one function of each of the hormones.	2
Q4	Explain any two methods of Assisted Reproductive Technology (ART) that have helped childless couples to bear children.	2
Q5	Why is ZIFT a boon to childless couples? Explain the procedure.	2
Q6	Write the mode of pollination in vallisneria and water lily. Explain the mechanism of pollination in Vallisneria.	3
Q7	Draw a transverse sectional view of an apple and label the following parts along with their technical name.	3

Q7 (continued)
  A) Edible part
  B) Encloses the embryo
  C) Forms the fruit wall

Q8	A) Draw a sectional view of human ovary. Label the following parts:	3

  a) Primary follicle
  b) Secondary oocyte
  c) Graafian follicle
  d) Corpus luteum
  B) Name the hormones influencing follicular development of corpus luteum.

Q9	Alien species are highly invasive and are a threat to indigenous species. Substantiate this statement with any three examples.	3
	OR	
	Explain "rivet popper" hypothesis. Name the ecologist who proposed it.	
Q10	Describe the three manners in which fertilization of human ovum by a sperm can be prevented.	3
Q11	Represent through diagram the various events taking place during menstrual cycle.	5

  a) Uterine events
  b) Ovarian events
  c) Pituitary hormone levels
                    OR
Describe the structure of mammalian sperm with a labeled diagram.

Q12	What is the significance of the slope of regression in a species area relationship?	5

The loss of one species may lead to extinction of another. Explain it with an example.
                    OR
What is IUCN Red list? Give its main aim and uses.
List three consequences of loss of biodiversity.

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DAV PUBLIC /MODEL SCHOOLS, WEST BENGAL ZONE

MID TERM / HALF YEARLY PEN PAPER ONLINE ASSESSMENT
SESSION – 2020 - 21

CLASS - XII   **SUBJECT - HINDI (1st paper)**

Maximum Marks : 35   **TimeAllowed : 90 Mins.**

सामान्य निर्देश :

- इस प्रश्न - पत्र में दो खंड हैं 'क' 'ख'
- दोनों खण्डों के प्रश्नों के उत्तर देना अनिवार्य है

संख्या	प्रश्न	अंक
1.	**(खंड 'क') अपठित अंश** **निम्नलिखित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए -** बड़ी चीजें संकटों में विकास पाती हैं, बड़ी हस्तियाँ बड़ी मुसीबतों में पलकर दुनिया पर कब्जा करती हैं। अकबर ने तेरह साल की उम्र में अपने पिता के दुश्मन को परास्त कर दिया था, जिसका एकमात्र कारण यह था कि अकबर का जन्म रेगिस्तान में हुआ था और वह भी उस समय, जब उसके पिता के पास एक कस्तूरी को छोड़कर और कोई दौलत नहीं थी। महाभारत में देश के प्रायः अधिकांश वीर कौरवों के पक्ष में थे, मगर फिर भी जीत पांडवों की हुई, क्योंकि उन्होंने लाक्षागृह की मुसीबत झेली थी, क्योंकि उन्होंने वनवास के जोखिम को पार किया था। विंस्टन चर्चिल ने कहा है कि जिंदगी की सबसे बड़ी सिफ़त हिम्मत है। आदमी के और सारे गुण उसके हिम्मती होने से पैदा होते हैं। जिंदगी की दो ही सूरतें हैं। एक तो आदमी बड़े - से - बड़े मकसद के लिए कोशिश करे, जगमगाती हुई जीत पर पंजा डालने के लिए हाथ बढ़ाए और अगर असफलताएँ कदम-कदम पर जोश की रोशनी के साथ अँधियाली या जाल बुन रही हों, तब भी वह पीछे को पाँव न हटाए - दूसरी सूरत यह है कि उन गरीब आत्माओं का हमजोली बन जाए, जो न तो बहुत अधिक सुख पाती हैं और न जिन्हें बहुत अधिक दुख पाने का ही संयोग है, क्योंकि वे आत्माएँ ऐसी गोधूलि में	2x5=10

बसती हैं, जहाँ न तो जीत हँसती है और न कभी हार के रोने की आवाज़ सुनाई देती है। इस गोधूलि वाली दुनिया के लोग बँधे हुए घाट का पानी पीते हैं वे ज़िंदगी के साथ जुआ नहीं खेल सकते। और कौन कहता है कि पूरी ज़िंदगी को दाँव पर लगा देने में कोई आनंद नहीं है? अगर रास्ता आगे ही निकल रहा हो, तो फिर असली मज़ा तो पाँव बढ़ाते जाने में ही है। साहस की ज़िंदगी सबसे बड़ी ज़िंदगी होती है। ऐसी ज़िंदगी की सबसे बड़ी पहचान यह है कि वह बिलकुल निडर, बिलकुल बेखौफ़ होती है। साहसी मनुष्य की पहली पहचान यह है कि वह इस बात की चिंता नहीं करता कि तमाशा देखने वाले लोग उसके बारे में क्या सोच रहे हैं। जनमत की उपेक्षा करके जीने वाला आदमी दुनिया की असली ताकत होता है और मनुष्यता को प्रकाश भी उसी आदमी से मिलता है। अड़ोस - पड़ोस को देखकर चलना, यह साधारण जीव का काम है। क्रांति करने वाले लोग अपने उद्देश्य की तुलना न तो पड़ोसी के उद्देश्य से करते हैं और न अपनी चाल को ही पड़ोसी की चाल देखकर मद्धिम बनाते हैं।

क) गद्यांश में अकबर का उदाहरण क्यों दिया गया है?

ख) आशय स्पष्ट कीजिए "जहाँ न तो जीत हँसती है और न कभी हार के रोने की आवाज़ सुनाई देती है।"

ग) साहस की ज़िंदगी को सबसे बड़ी ज़िंदगी क्यों कहा गया है?

घ) दुनिया की असली ताकत किसे कहा गया है और क्यों?

ङ) क्रांतिकारियों के क्या लक्षण हैं ?

2.	वैराग्य छोड़ बाहों की विभा सँभालो, चट्टानों की छाती से दूध निकालो। है रुकी जहाँ भी धार शिलाएँ तोड़ो, पीयूष - चंद्रमाओं को पकड़ निचोड़ो चढ़ तुंग शैल-शिखरों पर सोम पियो रे। योगियों नहीं, विजयी के सदृश जियो रे। छोड़ो मत अपनी आन, सीस कट जाए, मत झुको अनय पर, भले व्योम फट जाए। दो बार नहीं यमराज कंठ धरता है, मरता है जो एक ही बार मरता है।	2x3=06

तुम स्वयं मरण के मुख पर चरण धरो रे,

जीना हो तो मरने से नहीं डरो रे।

स्वातंत्र्य जाति की लगन व्यक्ति की धुन है,

बाहरी वस्तु यह नहीं, भीतरी गुण है।

नत हुए बिना जो अशनि-घात सहती है,

स्वाधीन जगत में वही जाति रहती है।

वीरत्व छोड़ पर का मत चरण गहो रे।

जो पड़े आन खुद ही सब आग सहो रे॥

(क) कवि भारतीय युवकों को ऐसा जीवन जीने को क्यों कहता है जो योगियों जैसा नहीं, वरन पराक्रमी वीरों जैसा हो ?

(ख) कवि के अनुसार किन परिस्थितियों में मृत्यु की चिंता नहीं करनी चाहिए ?

(ग) कवि ने स्वतंत्रता को 'बाहरी वस्तु न कह कर भीतरी गुण' क्यों कहा गया है?

3.	**(खंड ख) कार्यालयी हिंदी और रचनात्मक लेखन** निम्नलिखित में से किसी एक विषय पर लगभग 150 शब्दों में रचनात्मक लेख लिखिए- (क) स्वच्छता आज की अनिवार्य आवश्यकता है (ख) मन के हारे हार है, मन के जीते जीत (ग) अनुशासन सफलता की कुंजी	5
4.	आप विद्यालय के वार्षिकोत्सव में एक नाटक प्रस्तुत कर रहें हैं| पूर्वाभ्यास के बीच आपने पाया की दो विद्यार्थी बाहर धूम्रपान कर रहें हैं, आपको अच्छा नहीं लगा । इस समस्या से अवगत कराने तथा इसे रोकने हेतु अपने प्रधानाचार्य को 120 - 150 शब्दों में पत्र लिखिए | **अथवा** आजकल टेलीविज़न द्वारा विभिन्न चैनलों पर अंधविश्वास तथा तंत्र - मंत्र	5

	से संबंधित कार्यक्रम दिखाकर जनता को भ्रमित किया जा रहा है । भारत सरकार के सूचना एवं प्रसारण मंत्री को उसकी जानकारी देते हुए ऐसे कार्यक्रमों पर रोक लगाने का अनुरोध करते हुए 120 - 150 शब्दों में उल्लेख कीजिए।	
5.	निम्नलिखित में से किसी एक का उत्तर दीजिए- कविता लेखन हेतु आवश्यक प्रमुख घटकों पर प्रकाश डालिए । **अथवा** "नाटक का प्रथम अंग समय का बंधन है।'' इस कथन की पुष्टि कीजिए । **अथवा** मीडिया की विश्वसनीयता पर लगते प्रश्न चिह्न विषय पर एक फ़ीचर लिखिए ।	3
6.	उल्टा पिरामिड शैली में समाचार लेखन की प्रक्रिया पर प्रकाश डालिए । **अथवा** पत्रकारों में कौन सा गुण होना चाहिए और क्यों ?	3
7.	मुद्रित माध्यमों की सबसे बड़ी विशेषता क्या है ? **अथवा** इंटरनेट पत्रकारिता के अन्य प्रचलित नाम क्या - क्या है ?	3

DAV PUBLIC /MODEL SCHOOLS, WEST BENGAL ZONE
MID TERM / HALF YEARLY   PEN PAPER ONLINE ASSESSMENT
SESSION – 2020 - 21

CLASS - XII   **SUBJECT - HINDI (2nd paper)**

Maximum Marks : 35   **TimeAllowed : 90 Mins.**

सामान्य निर्देश :

- इस प्रश्न - पत्र में दो खंड हैं 'क' 'ख'
- दोनों खण्डों के प्रश्नों के उत्तर देना अनिवार्य है

संख्या	प्रश्न	अंक
1.	**(खंड 'क') पठित अंश 'आरोह'** **निम्नलिखित काव्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए -** सोचिए बताइए आपको अपाहिज होकर कैसा लगता है कैसा यानी कैसा लगता है (हम खुद इशारे से बाताएंगे कि क्या ऐसा सोचिए बताइए थोड़ी कोशिश करिए यह अवसर खो देंगें ?) आप जानते हैं की कार्यक्रम रोचक बनाने के वास्ते हम पूछ - पूछकर उसको रुला देंगे इंतजार करते हैं आप भी उसके रो पड़ने का (यह प्रश्न पूछा नहीं जाएगा) क) दूरदर्शन का कार्यक्रम संचालक अपाहिज व्यक्ति के दुःख को बार - बार	2x3=06

	क्यों प्रकट करना चाहता है ?	
	ख) किसी व्यक्ति के दुःख की प्रस्तुति करके कार्यक्रम को रोचक बनाना कहाँ तक उचित है ?	
	ग) काव्यांश की काव्य पंक्ति "इंतजार करते हैं आप भी उसके रो पड़ने का" किसके लिए प्रयुक्त की गई है ?	
2	**निम्नलिखित काव्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए -** सचमुच मुझे दंड दो कि भूलूँ मैं भूलूँ मैं तुम्हें भूल जाने की दक्षिणी - ध्रुवी अन्धकार अमावस्या शरीर पर, चेहरे पर, अंतर पा लूँ मैं झेलूँ मैं नहा लूँ मैं क) प्रस्तुत काव्यांश का काव्य - सौंदर्य स्पष्ट कीजिए। ख) अमावस्या के लिए प्रयुक्त विशेषणों का भाव स्पष्ट कीजिए ।	2x2=04
3.	**निम्नलिखित प्रश्नों में से किसी दो प्रश्नों के उत्तर दीजिए ।** क) कैमरे में बंद अपाहिज़ कविता को आप करुणा की कविता मानते हैं या क्रूरता की ? तर्क संगत उत्तर दीजिए । ख) "बहलाती सहलाती आत्मीयता बर्दाश्त नहीं होती है" और कविता का शीर्षक ''सहर्ष स्वीकारा है'' में आप कैसा अंतर्विरोध पाते हैं ? स्पष्ट कीजिए । ग) कविता के किन उपमानों को देख कर कहा जा सकता है कि 'उषा' कविता गाँव की सुबह का गतिशील शब्द - चित्र है ?	3x2=6
4.	**निम्नलिखित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए -** पिता का उस पर अगाध प्रेम होने के कारण स्वभावतः ईष्यालु और संपत्ति की रक्षा में सतर्क विमाता ने उनके मरणांतक रोग का समाचार तब भेजा,	2x3=06

जब वह मृत्यु की सूचना भी बन चुका था। रोने - पीटने के अपशकुन से बचने के लिए सास ने भी उसे कुछ न बताया। बहुत दिन से नैहर नहीं गई, सो जाकर देख आवे, यही कहकर और पहना - उढ़ाकर सास ने उसे विदा कर दिया। इस अप्रत्याशित अनुग्रह ने उसके पैरों में जो पंख लगा दिए थे, वे गाँव की सीमा में पहुँचते ही झड़ गए। 'हाय लछमिन अब आई' की अस्पष्ट पुनरावृत्तियाँ और स्पष्ट सहानुभूति पूर्ण दृष्टियाँ उसे घर तक ठेल ले गई। पर वहाँ न पिता का चिह्न शेष था, न विमाता के व्यवहार में शिष्टाचार का लेश था। दुख से शिथिल और अपमान से जलती हुई वह उस घर में पानी भी बिना पिए उलटे पैरों ससुराल लौट पड़ी। सास को खरी-खोटी सुनाकर उसने विमाता पर आया हुआ क्रोध शांत किया और पति के ऊपर गहने फेंकफेंककर उसने पिता के चिर विछोह की मर्मव्यथा व्यक्त - की।

क) भक्तिन की विमाता ने पिता की बीमारी का समाचार देर से क्यों भेजा?

ख) सास ने लछमिन को क्या बहाना बनाकर मायके भेजा? क्यों?

ग) गाँव में जाकर लछमिन को कैसा व्यवहार मिला ?

5.	**निम्नलिखित प्रश्नों में से किसी एक प्रश्न के उत्तर लिखिए ।**	3x1=3
	क) 'बाज़ार दर्शन' के अनुसार बाज़ार का जादू चढ़ने और उतरने पर क्या - क्या प्रभाव पड़ता है ?	
	ख) 'पहलवान की ढोलक' कहानी में दंगल में विजयी होने के पश्चात लुट्टन सिंह की जीवन - शैली में क्या परिवर्तन आ गया था ?	
	ग) दान के लिए किसे आवश्यक माना गया है तथा क्यों ? 'काले मेघा पानी दे' पाठ के आधार पर स्पष्ट कीजिए ।	
6.	**(खंड 'ख') 'वितान'**	5x2=10
	निम्नलिखित प्रश्नों में से किसी दो प्रश्नों के उत्तर लिखिए -	
	क) आज के युग के सन्दर्भ में यशोधर बाबू के स्वभाव पर टिप्पणी करते	

हुए बताइए कि आप इसमें क्या - क्या बदलाव चाहतें हैं ?

ख) 'जूझ' कहानी के लेखक के पिता ने किन - किन शर्तों के आधार पर लेखक को पढ़ने की आज्ञा दी ?

ग) "किशनदा ने यशोधर बाबू की बहुत सहायता की थी'' इस कथन को 'सिल्वर वैडिंग' कहानी के आधार पर स्पष्ट कीजिए ।

DAV PUBLIC/MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION: 2020-21
PAPER - I

CLASS: XII   **MAXIMUM MARKS: 35**
SUBJECT: CHEMISTRY   **TIME: 1 ½ HOURS**

General Instructions:-

- All questions are compulsory.
- There is no overall choice. However, an internal choice has been provided in two questions of two marks, one question of three marks and one question of five marks. You have to attempt only one of the choices in such questions.
- Use of calculator is not permitted. However, you may use log tables if necessary.

1. Nitric oxide, NO, reacts with oxygen to produce nitrogen dioxide: 2

    $2NO(g) + O_2(g) \rightarrow 2NO_2(g)$

    The rate law for this reaction is,

    Rate = $k[NO]^2[O_2]$

    Propose a mechanism for the reaction.

    OR

    Why molecularity applicable only for elementary reactions and order is applicable for elementary as well as complex reaction?

2. A mixed oxide is made up of Zn^{2+}, Al^{3+} and O^{2-}. Oxide ions are arranged in ccp layers. One-eighth of the tetrahedral holes are occupied by Zn^{2+} ions and half of the octahedral holes are occupied by Al^{3+} ions. Find the formula of mixed oxide.   2

    OR

    Explain how much portion of an atom located at

    (i)corner and

    (ii)body centre of a cubic unit cell is part of its neighbouring unit cell.

3.   a) Why does presence of excess lithium makes LiCl crystals pink?   2

        b) Why is the Frenkel defect not found in pure alkali metal halides?

4. Explain the following: 2

        a) Ozone is used in swimming pools.

        b) Decomposition of ozone molecule is a spontaneous process.

5. Predict the order of reactivity of the following compounds in S_N1 reaction and also explain the reason.   2

    The four isomeric bromobutanes.

6. a)Find the two-third life ($t_{2/3}$) of a first order reaction in which   3

    $k= 5.48 \times 10^{-1} sec^{-1}$

    b)The rate law for the reaction,

    Ester + $H^+ \rightarrow$ Acid + Alcohol, is

    $\frac{dx}{dt} = k[Ester][H^+]^0$

    What would be the effect on the rate if

    (i)Concentration of the ester is doubled

    (ii) Concentration of the H^+ is doubled

7. In a pseudo first order hydrolysis of ester in water, the following results were obtained: 3

t/s	0	30	60	90
[Ester]mol^{-1}	0.55	0.31	0.17	0.085

    (i)Calculate the average rate of reaction between the time interval 30 to 60 seconds.

    (ii)Calculate the pseudo first order rate constant for the hydrolysis of ester.

8. Chromium metal crystallizes with a body-centred cubic lattice. The length of the unit cell edge is found to be 287pm. Calculate the atomic radius. What would be the density of chromium in g/cm^3.   3

9. a)Draw the structures of the following :   3

    (i)$H_2S_2O_8$

    (ii) BrF_5

    (iii)$XeOF_4$

    OR

    Complete the following chemical equations:

    (i)$Fe^{3+} +SO_2 +H_2O \rightarrow$

    (ii)$S + H_2SO_4 \rightarrow$

    (iii) $XeF_6 +H_2O$ (Complete Hydrolysis)$\rightarrow$

10. Explain why: 3

    a)Dipole moment of chlorobenzene is lower than that of cyclohexyl chloride.

    b)Alkyl halides, though polar, are immiscible in water.

    c)Grignard reagents should be prepared under anhydrous conditions.

11. Primary alkyl halide (A) C_4H_9Br reacted with alcoholic KOH to give compound (B). Compound (B) is reacted with HBr to give (C) which is an isomer of (A). When (A) is reacted with sodium metal it gives compound (D), C_8H_{18} which is different from the compound formed when n-Butyl bromide was reacted with sodium. Give the structural formula of (A),(B),(C), (D) and write the equations for all the reactions.   5

    OR

    a)Give reasons for the following:

    (i) Ethyl iodide undergoes S_N2 reaction faster than ethyl bromide

    (ii) ($\pm$)2-Butanol is optically inactive.

    (iii) C-X bond length in halobenzene is smaller than C-X bond length in CH_3-X.

    b)How will you convert the following:

    (i)Prop-1-ene to 1-Flouropropane

    (ii)Ethanol to Propanenitrile.

12. a) SO_2 is reducing while TeO_2 is an oxidising agent. Explain   5

    b) Why do noble gases have very low boiling points?

    c) BiH_3 is a strongest reducing agent amongst all the hydrides of group 15 elements. Account

    d) Xe form compound with fluorine and oxygen only. Explain.

    e) H_2S is stronger acid than H_2O. Explain

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DAV PUBLIC/MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION: 2020-21
PAPER- II

CLASS: XII　　　　　　　　　　　　　**MAXIMUM MARKS: 35**

SUBJECT: CHEMISTRY　　　　　　　　**TIME: 1 ½ HOURS**

General Instructions:-

- All questions are compulsory.
- There is no overall choice. However, an internal choice has been provided in two questions of two marks, one question of three marks and one question of five marks. You have to attempt only one of the choices in such questions.
- Use of calculator is not permitted. However, you may use log tables if necessary.

1　Give reason for the following　　　　　　　　　　　　　　　　2
　　a) Measurement of osmotic pressure method is preferred for the determination of molar masses of macromolecules such as proteins and polymers.
　　b) Mixture of ethanol and acetone shows positive deviation from Raoult's Law.

2　What osmotic pressure would 1.25molal sucrose solution exhibit at 25^0C? The density of the solution is 1.34g/mL.　　　2

3　Why do physisorption and chemisorption behave differently with rise in temperature?　　　2
OR
What do you understand by activation of adsorbent? How is it achieved?

4　Give reason:　　　　　　　　　　　　　　　　　　　　　　2
　　a) Ionic conductance increases with increase in temperature.
　　b) Conductivity of an electrolyte solution decreases with the decreases in concentration.

5　How will you distinguish between allyl alcohol and n-propyl alcohol?　　2
OR
How will you distinguish between $CH_3(CH_2)_3OH$ and $CH_3CH=CHCH_2CH_2OH$ by a chemical test

6　Liquids A and B form an ideal solution over the entire range of composition. At temperature T, equimolar binary solution of liquids A and B has vapour pressure 45 torr. At the same temperature , a new solution of A and B having mole fraction X_A and X_B respectively, has vapour pressure of 22.5 torr. Calculate the value of X_A/X_B for the new solution (assume that the vapour pressure of pure liquid is 20 torr at temperature T).　　3

7　What happen when　　　　　　　　　　　　　　　　　　　3
　　a) Dialysis is prolonged?
　　b) Electric field is applied to colloidal solution?
　　c) An electrolyte NaCl is added to ferric hydroxide sol?

8　Give reasons for the following:　　　　　　　　　　　　　　3
　　a) On the basis of Hardy-Schulze rule, the coagulating power of phosphate ions is higher than that of chloride ions.
　　b) $Fe(OH)_3$ colloid positively charged when prepared by adding $FeCl_3$ to hot water.
　　c) A delta is formed at the meeting place of sea and river water.

9　a) Alcohols can act both as acids and bases. Explain.　　　　　3
　　b) Why is cyclohexanol more soluble in water than hexan-1-ol?
　　c) Why cannot anhydrous calcium chloride be used for drying ethyl alcohol?
OR
a) Arrange following in decreasing order of boiling points and account for the order. (A)Pentan-1-ol , (B) 2-Methylbutan-2-ol , (C) 3-Methylbutan-2-ol
b)Outline the synthesis of the following alcohol from the indicated starting material
　(i)Isopropyl alcohol from propane.

10　　　　　　　　　　　　　　　　　　　　　　　　　　　　3
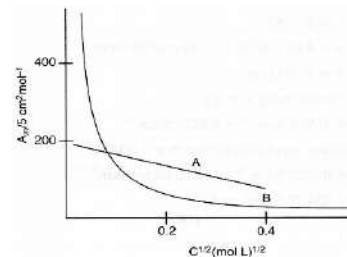
a) What can you say about the nature of these two electrolytes?
b) How do you account for the increase in Λ_m for the electrolyte A and B with dilution?
c) How can you determine Λ_m^0 for these electrolytes?

11　a)What happens when　　　　　　　　　　　　　　　　　　5
(i)Phenol reacts with CO_2 in presence of NaOH.
(ii)Ethanol reacts with CH_3COCl/pyridine
(iii)Anisole reacts with HI?
Write the chemical equations involved in the above reactions.
b)Write the mechanism for preparation of diethyl ether from ethyl alcohol

12　Calculate e.m.f and ΔG for the following cell at 298 K　　5
$Mg \mid Mg^{2+}$ (0.01M) $\mid \mid Ag^+$ (0.0001M) $\mid Ag(s)$
Given E^0Mg^{2+}/Mg = -2.37V, E^0Ag^+/Ag = 0.80V
OR
a) The electrical resistance of a column of 0.05M NaOH solution of diameter 1cm and length 50cm is 5.55×10^3 ohm. Calculate its resistivity, conductivity and molar conductivity.
b) Calculate the degree of dissociation (α) of acetic acid if its molar conductivity (Λ_m) is 39.05 Scm^2mol^{-1}. Given $\lambda^0(H^+)$ = 349.6 Scm^2mol^{-1} and $\lambda^0_{(CH3COO-)}$ = 40.9 Scm^2mol^{-1}

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DAV PUBLIC/ MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION 2020-21
PAPER-I

CLASS: XII   **MAXIMUM MARK:35**
SUBJECT: COMPUTER SCIENCE   **TIME: 1 ½ HOURS**

Q1.   Differentiate between Syntax Error and Run-Time Error. Also, write a suitable   1+1=2
      example in Python to illustrate both.

Q2.   Rewrite the following python program after removing all the syntax errors (if any).   2
      Underline each correction.

      def checkval:
         x = input("Enter a number")
         if x % 2 = 0:
            print x,"is even"
         else if x<0:
            print x,"should be positive"
         else;
               print x,"is odd"

Q3.   Which string method is used to implement the following? Also write the appropriate   ½ X
      syntax for the function   4=2

      (i) To count the number of characters in the string.

      (ii) To change the first character of the string in capital letter.

      (iii) To check whether the given character is a letter or a number.

      (iv) To change lower case to upper case letter.

Q4.   Which of the following cannot be used as valid identifier(s) in Python? Give   2
      appropriate reason for your answer.

      My.file, _Count, For, 2digits, Total, Number#, Name1, main, append

Q5.   What happens when python encounters an import statement in a program? How   1+1
      "import <module>" and "from <module> import statements are different from each
      other?

Q6.   Find the output of the following python code.   2

      colors = ["violet", "indigo", "blue", "green", "yellow", "orange", "red"]
      del colors[4]
      print(colors.remove("blue"))
      print(colors.pop(3))
      print(colors)

Q7.   Differentiate between Call by value and Call by Reference with suitable example.   2

Q8.   What do you understand by standard library of Python? Write down the steps to create   2
      own library/package in python.

Q9.   Find the output of the following code.   2

      def change():
         L=[]
         L1=[]
         L2=[]
         for i in range(1,10):
            L.append(i)
         for i in range(10,1,-2):
            L1.append(i)
         for i in range(len(L1)):
            L2.append(L1[i]+L[i])
         L2.append(len(L)-len(L1))
         print(L2)
      change()

Q10. What is an argument? Define with proper syntax for different types of arguments that   3
      can be used in a function.

Q11. Write the program in python using a method COUNTNOW(PLACES) which takes a   3
      list of strings as argument and display the longest place name.

      For example: If the list PLACES contains.

      ["SYDNEY","TOKYO","PINKCITY","BEIJING","SUNCITY"]
      Output : PINKCITY

Q12. Write a python program that accepts a hyphen separated sequence of words as input   3
      and print the words in a hyphen separated sequence after sorting them alphabetically.
      Ex (Input): green-red-yellow-black-white
      Output: black-green-red-white-yellow

Q13. Write a Function in Python to search a number from the entered list using binary search   4
      technique.

Q14. Write a program in Python using function named Create(str) which takes a string as   4
      argument and returns a dictionary by creating from that string as per following format.
      Example   string : 'w3resource'
      Expected Dictionary: {'3': 1, 's': 1, 'r': 2, 'u': 1, 'w': 1, 'c': 1, 'e': 2, 'o': 1}

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DAV PUBLIC/ MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION 2020-21
PAPER-II

CLASS: XII   **MAXIMUM MARK:35**
SUBJECT: COMPUTER SCIENCE   **TIME: 1 ½ HOURS**

|		
Q1.	What do you mean by pickling and unpickling process? What is the need of these processes?	2
Q2.	Explain any four functions used for different file operations.	2
Q3.	Write a function file_long() that accepts a filename and its mode as argument display the longest line present in that text file. (Consider the file has multiple lines of data)	2
Q4.	Write a program to read from a csv file (student.csv) contains data of students (Admno, Sname, Stream) and copy those information to another csv file (Stream.csv) having the stream of the student is "Science".	3
Q5.	Briefly explain about different types of file opening modes used in file operations.	3
Q6.	Consider a binary file Employee.dat containing details of an employee such as empno, ename, salary. Write a function to display details of those employees who are earning salary between 20000 to 40000.	3
Q7.	What are Stack and Queue data structures? Enlist some applications of Stack and Queue.	3
Q8.	Write Addnew(Book) and Remove(Book) methods in python to Add a new Book and Remove a Book from a list of Books, considering them to act as ENQUEUE and DEQUEUE operations of the data structure Queue.	4
Q9.	Define Interspace.	1
Q10	What is the difference between Client-Server and Peer-to-Peer Networks?	2
Q11.	Why switching techniques and used in network? Explain about Packet switching technique.	2
Q12.	Write the expanded forms of the following abbreviated terms used in networking and communications: (i) SMTP (ii) VoIP (iii) GSM (iv) WLL	2
Q13.	Differentiate between guided and unguided media of communication with examples of each.	2

Q14.   Knowledge Supplement Organization has set up its new centre at Mangalore for its office and web-based activities. 4 blocks of buildings as shown in the diagram below: 1 X 4= 4

Centre to centre distances between various blocks:

Block A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of computers:

Block A	25
Block B	50
Block C	125
Block D	10
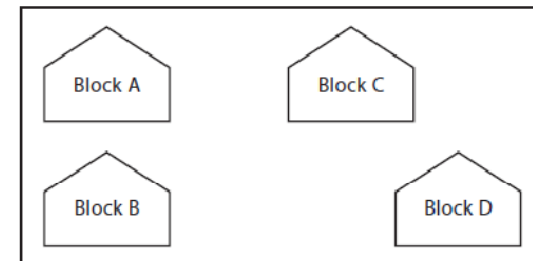
(i) Suggest the suitable topology for establishing network .

(ii) Suggest the most suitable place (*i.e.*, block) to house the server of this organization with a suitable reason.

(iii) Suggest the placement of the following devices with justification:

    (a) Repeater   (b) Hub/Switch

(iv) The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible. Suggest an economic way to connect it with reasonably high speed.

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CLASS: XII   **MAXIMUM MARK:35**
SUBJECT: ECONOMICS   **TIME: 1 ½ HOURS**

1. Machineries purchased by a producer will be an intermediate good or a final good?   1

2. Name two components of government budget.   1

3. Illustrate functions of RBI as banker to banks. (Any three)   3
   OR
   Illustrate functions of RBI as banker to government. (Any three)

4. State whether the following will be included in national income or not: 1+3
   a. Mobile Set purchased by a mobile dealer
   b. Interest paid by a household to banks against a car loan
   c. Free treatment provided by government hospital

5. a. What is budgetary deficit?   1+2
   b. Calculate revenue deficit, fiscal deficit and primary deficit from the following.
     i. Capital Receipts net of borrowing – Rs. 95 Cr.
     ii. Revenue Expenditure – Rs. 100 Cr.
     iii. Interest Payment – Rs. 10 Cr.
     iv. Revenue receipts – Rs. 80 Cr.
     v. Capital Expenditure – Rs. 110 Cr.

6. Distinguish between   2+2
   a. Factor income and Transfer income. (Any two)
   b. Stock and Flow (Any two)

7. a. Define the M_1 measurement of supply of money as presented by RBI.   2+2
   b. If LRR = 20%, initial (primary) deposit = Rs. 1000, what will be the total money creation by the banks?

8. Explain any two objectives of govt. budget.   2+2
   OR
   Distinguish between direct and indirect tax with an example of each.

9. a. Giving reasons state whether the following are revenue receipts or capital receipts.   3+3
   i. Sell off PSUs
   ii. Corporation tax
   b. Giving reasons state whether the following are revenue expenditures or capital expenditures.
   i. RAFALE fighter jets purchased by India from France.
   ii. COVID-19 Grant given to state
   iii. External loans raised by central govt. from abroad govt. by the central govt.
   iii. Payment to parliamentarians

10. a. Calculate net value added at factor cost from the following: 4+2

Sl. No.	Items	Rs. (in Cr.)
1.	Consumption of fixed capital	600
2.	Import duty	400
3.	Output sold (Units)	2,000
4.	Price per unit of output	10
5.	Net change in stock	(-)50
6.	Intermediate cost	10,000
7.	Subsidy	500

b. State two precautions of the method used for solving above numerical.

OR (A+B)
A. Explain the circular flow of income in a two-sector economy.
B. What precautions are to be taken while measuring national income by income method?

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DAV PUBLIC/ MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION 2020-21
PAPER-II (Indian Economic Development)

CLASS: XII   **MAXIMUM MARK:35**
SUBJECT: ECONOMICS   **TIME: 1 ½ HOURS**

1.	What was the IMR in India on the eve of independence?	1
2.	What do you mean by churning poor?	1
3.	Mention two important features of India's occupational structure during the British period.	3
4.	Explain 'growth with equity' as a planning objective.	3
5.	Differentiate between absolute poverty and relative poverty. OR Explain two reasons behind poverty in India.	3
6.	Discuss two reasons for India's agricultural stagnation during the colonial period.	4
7.	India has certain advantages which make it a favourable outsourcing destination. What are these advantages? OR State the reforms introduced under financial sector in India.	4
8.	Explain how poverty line is determined in India?	4
9.	Explain why public sector was given a leading role in Industrial development during the planning period. OR What do you mean by land reforms? Explain any two measures which were taken under land reform in India.	6
10.	Why were Economic Reforms introduced in India? (Explain any three reasons)	6

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DAV PUBLIC/ MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION 2020-21

CLASS: XII   **MAXIMUM MARKS :35**
SUBJECT: ENGLISH   **TIME: 1 ½ HOURS**

Paper-1
WRITING SKILLS

1. You are Ruhi/Rahul, head girl/boy of Amar Public School, Mumbai. Your school is going to organize an online workshop for students interested in photography. Write a notice to be circulated to students instructing the interested students to register. **3**

2. Your younger brother needs to be kept productively engaged during lockdown confinement, hence the family wishes to engage a private coach to teach him the game of chess. Draft a suitable advertisement. **3**

3. Your pet Poodle has gone missing since last evening. Draft an advertisement to be inserted in the Classified columns of a local newspaperto retrieve your pet. **3**

4. Your school, SKD Model School, Sonipat, is going to celebrate its Silver Jubilee Year through a bonanza of weeklong cultural events. Draft an invitation for the parents. **3**

5. Mr. Sourabh Mehta, an eminent scientist of the city of Jaipur has been invited to attend a seminar as a guest speaker at the City Science Institute. Due to a prior engagement, he is not able to respect the invitation. Draft a suitable reply. **3**

6. You are Shilpa/Sameer living in Bangalore. You have just completed your studies for a diploma in Food Technology. While browsing through The Hindustan Times, you come across the following advertisement. Send your application in response to this advertisement. "*An upcoming food processing unit in Mysore requires **Food technologists:** 2 yrs degree/diploma in food technology having 1-2 yrs lab experience. Eligible candidates apply to the Manager,Anand Food Processors, 26/7 Rose Avenue, Mysore, in 7 days*" **5**

7. Write a letter to the Editor of the magazine, Expressions, New Delhi, on the dire need to maintain social distancing even after Government lifts the lockdown laws. Sign yourself as Kamal. **5**

8. You are Pulkit/Prerna, a staff reporter of The Times of India. You have been asked to cover an incident of daylight robbery on the outskirts of Delhi when the inmates were present in the house. Write a report in 100-125 words. **5**

9. Write an article in 150 words for your school magazine on the topic 'We believe what the media wants us to believe'. **5**

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DAV PUBLIC/ MODEL SCHOOLS, WEST BENGAL ZONE
ONLINE MID TERM PEN PAPER ASSESSMENT
SESSION 2020-21

CLASS: XII   **MAXIMUM MARKS :35**
SUBJECT: ENGLISH   **TIME: 1 ½ HOURS**
Paper-2
LITERATURE

1. **Answer the following in 40 words each:**   **2x10=20**

a. What was Franz's reaction to the declaration that it was the last class?

b. Why didn't the people settled in Seemapuri go back to their own native place?

c. Mention the hazards of working in a glass-bangle factory.

d. Describe the boy who tossed Douglas into the pool.

e. What were the terms and condition in the contract between the British landlords and the Indian sharecroppers?

f. What is Charley trying to escape?

g. Why did the General not order an immediate arrest of Dr. Sadao, who had sheltered an American prisoner of war?

h. To whom does Stephen Spender make an appeal in his poem? What is the appeal?

i. What 'sadness' does the poet refer to in the poem 'Keeping Quiet'?

j. According to Keats, what makes human beings love life inspite of troubles and sufferings?

2. **Answer the following in 150 words each:**   **5x3=15**

a. Bring out the complexities of human relationships as depicted by Kamala Das in her poem 'My Mother at Sixty-six'.

b. Do you think Jo's ending to the story was right? Why / Why not?

c. The story 'The Rattrap' is both philosophical and entertaining. Justify.

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DAV PUBLIC/MODEL SCHOOLS, WEST BENGAL ZONE
ON LINE MID TERM PEN PAPER ASSESMENT
SESSION 2020-21
PAPER-I

CLASS: XII   MAXIMUM MARKS: 35

SUBJECT: MATHEMATICS   TIME: $1\frac{1}{2}$ HOURS.

Section -A

1. Let A and B be two matrices of order 3x2 and 2x4 respectively. Write the order of the matrix (AB).   1

Section -B

2. State the reason for the relation R in the set {1,2,3} given by R = {(1,2),(2,1)} is not to be transitive.   2

OR

If R is a relation **" is divisor of "** from the set A={1,2,3} to B = {4,10,15}, then write down the set of ordered pairs corresponding to R.

3. Examine the following function for continuity: $f(x) = \frac{x^2-25}{x+5}$, $x \neq -5, x \in R.$ 2

4. Events A and B are such that $P(A) = \frac{1}{2}$, $P(B) = \frac{7}{12}$ and $P(not\ A\ or\ not\ B) = \frac{1}{4}$. State whether A and B are independent.   2

Section -C

5. *Let A and B be two sets . Show that $f: A \times B \to B \times A$, such that $f(a,b) = (b,a)$ is bijective function.*   4

6. If $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}, B = \begin{bmatrix} a & 1 \\ b & -1 \end{bmatrix}$ and $(A + B)^2 = A^2 + B^2$, then find the values of 'a' and 'b'.   4

7. If $y = \left(x + \sqrt{1 + x^2}\right)^n$, then show that $(1 + x^2)\frac{d^2y}{dx^2} + x\frac{dy}{dx} = n^2y$ 4

OR

If $x = a\left(t + \frac{1}{t}\right)$ and $y = a\left(t - \frac{1}{t}\right)$, prove that $\frac{dy}{dx} = \frac{x}{y}$.

8. There are three coins, one is a two headed coin (having head on both faces), another is a biased coin that comes up heads 75% of the time, and the third is an unbiased coin. One of the three coins is chosen at random and tossed, it shows head. What is the probability that it was the two headed coin?   4

Section -D

9. Express the matrix $A = \begin{bmatrix} 2 & 4 & -6 \\ 7 & 3 & 5 \\ 1 & -2 & 4 \end{bmatrix}$ as the sum of a symmetric and a skew-symmetric matrices.   6

10 Prove that radius of right circular cylinder of greatest curved surface area which can be inscribed in a given cone is half of that of the cone.   6

OR

Find the equations of the tangent to the curve $y = x^2 - 2x + 7$, which is
(i)   Parallel to the line $2x - y + 9 = 0.$
(ii)   Perpendicular to the line $5y - 15x = 13.$

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DAV PUBLIC/MODEL SCHOOLS, WEST BENGAL ZONE
ON LINE MID TERM PEN PAPER ASSESMENT
SESSION 2020-21
PAPER-II

CLASS:XII   MAXIMUM MARKS:35

SUBJECT: MATHEMATICS   TIME: $1\frac{1}{2}$ HOURS.

Section -A

1.   Find the principal value of $cosec^{-1}(-\sqrt{2})$.   1

Section -B

2.   Evaluate $cos^{-1}\left(\frac{1}{2}\right) + 2sin^{-1}\left(\frac{1}{2}\right)$.   2

OR

Find the value of $sin^{-1}\left(\frac{\sqrt{3}}{2}\right) + tan^{-1}(\sqrt{3})$.

3.   Evaluate $\int \frac{x^3}{\sqrt{1-x^8}} dx$.   2

4.   Find the order and degree, of the differential equation   2

$x\left(\frac{d^3y}{dx^3}\right)^2 + \left(\frac{dy}{dx}\right)^4 + y^2 = 0$

Section -C

5.   Find the value of $tan^{-1}(1) + cos^{-1}\left(-\frac{1}{2}\right) + sin^{-1}\left(-\frac{1}{2}\right)$ 4

6.   Evaluate $\int \frac{dx}{(x-1)\sqrt{2x+3}}$.   4

7.   Evaluate $\int_2^5 \{|x-2| + |x-3| + |x-5|\} dx$ 4

8.   Solve the differential equation $(x^2-1)\frac{dy}{dx} + 2xy = \frac{2}{x^2-1}$ 4

OR

Solve the differential equation $(x^2 - y^2)dx + 2xydy = 0$

Section -D

9.   Evaluate $\int_0^{\frac{\pi}{2}} sin2x tan^{-1}(sinx) dx$ 6

10   Using integration, find the area bounded by the tangent to the curve $y = 3x^2$ at   6
the point (1,3) and the lines whose equations are $y = \frac{x}{3}$ and $x + y = 4$.

OR

Using integration find the area of the region bounded by the triangle ΔABC
coordinates of whose vertices are $A(-1,2), B(1,5),$ and $C(3,4)$.

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