



**HOLIDAY HOMEWORK**

**CLASS- XII**

**SUBJECT - ENGLISH**

**SECTION A – READING SKILLS**

**Q.1 Read the following passage and answer the questions given below:**

**BURNING PLASTICS IS NO SOLUTION**

When plastic waste is burnt, a complex eave of toxic chemicals is released. Breaking down polyvinyl chloride (PVC) – used for packaging, toys and coating electrical wires – produces dioxin, an organochloride which belongs to the family of Persistent Organic Pollutants (POPs). A recent Dioxin Assessment Report brought out byu the United States Environment Protection Agency (USEPA) says the risk of getting cancer from dioxin is ten times higher than reported by the agency in 1994.

Yet the Delhi Government is giving the green signal to a gasification project which will convert garbage into energy without removing plastic waste. Former transport minister Rajender Gupta, the promoter of this project, says this is not necessary.

He claims no air pollution will be caused and that the ash produced can bre used as manure. An earlier waste-to-energy project set up in Timarpur failed. The new one, built with Australian assistance, will cost Rs. 200 crore. It will generate 25 megawatts of power and gobble 1,000 tonnes of garbage everyday.

“Technologies like gasification are a form of incineration,” says Madhumita Dutta, central coordinator with Toxics Link, New Delhi. Incineration merely transfers hazardous waste from a solid form to air, water and ash, she points out.

Toxins produced during incineration include acidic gases, heavy metals as well as dioxins and furans. “The

'manure' will be hazardous and a problem to dispose,” says Dutta.

Municipal solid waste contains a mix of plastics. Breaking down this waste emits hydrochloric acid which attacks the respiratory system, skin and eyes, resulting in coughing, vomiting and nausea.

Polyethylene generates volatile compounds like formaldehyde and acetaldehyde, both suspected carcinogenic. Breaking styrene from polystyrene can cause leukemia. Polyurethane is associated with asthma. Dioxin released by PVC is a powerful hormone disrupter and causes birth defects and reproductive problems. There is no threshold dose to prevent it and our bodies have no defence against it.

“Even the best run incinerators in the world have to deal with stringent norms, apart from contaminated filters and ash, making them hugely expensive to operate,” says Dutta. In Germany, air pollution devices accounted for two-thirds the cost of incineration. Despite such

efforts, the European Dioxin Inventory noted that the input of dioxin into the atmosphere was the highest from incineration.

"India does not have the facility to test dioxin and the cost of setting one up is prohibitively expensive," says Dutta.

Besides, Indian garbage has a low calorific content of about 800cal/kg, since it has high moisture and requires additional fuel to burn. Toxics Link calculates that the electricity generated from such technology will cost between Rs. 5-7 per unit, which is six times higher than conventional energy. India has chosen a dioxin preventive route and burning of chlorinated plastics is prohibited under Municipal Solid Waste and Biomedical Rules.

Nearly 80 percent of Indian garbage is recyclable or compostable. Resident associations, the informal sector and the municipal corporation can make Delhi's garbage disappear in a sustainable manner. "Instead, the government promotes end of pipeline solutions," says Dutta.

**Questions:**

**A. Choose the most appropriate option:**

- a. Dioxin causes ..... .
- |                |                   |
|----------------|-------------------|
| i. cancer      | (ii) heart attack |
| (iii) sickness | (iv) hypertension |
- b. The gasification process transforms ..... .
- |                         |                          |
|-------------------------|--------------------------|
| i.energy into garbage   | (ii) garbage into energy |
| (iii) water into energy | (iv) none of the above   |
- c. Garbage can be converted into energy by ..... .
- |                          |                    |
|--------------------------|--------------------|
| i.gasification           | (ii) gratification |
| (iii) a chemical process | (iv) incinators    |

**B. Answer the following questions briefly:**

- (a) Which toxic chemical is released on burning plastic waste? How is it harmful?
- (b) What is the aim of waste-to-energy project? What is likely to happen during incineration?
- c. How will burning plastic adversely impact the health of citizens?
- d. What two arguments are advanced against the use of incinerators?
- e. Why would gasification of waste prove a wasteful luxury in India?
- f. What facts are revealed in the passage pertaining to Indian garbage?

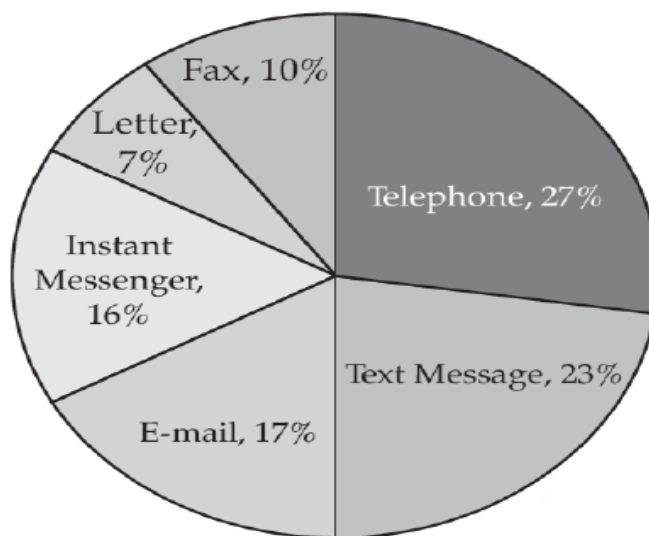
(g) Find words in the passage similar in meaning as:

(i) Waste material

(ii) Swallow

**Q II. Read the passage given 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% 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 line 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.
3. The students have indicated that they out of the choices given in the survey questionnaire, 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 SIX out of the seven questions given below by choosing the most appropriate option:**

1. Which means of communication is liked by more than one-fourth of the students?
- 2.. Which means of communication is liked by exactly one-tenth of the students?
3. How much of the students prefer either of telephones or text messages as medium of communication?
4. What is the overall response of the students to the survey?
5. What is the correct order of the medium of communication in decreasing order of preference?
6. Pick out the word or phrase from the passage which means the same as 'study' (used in para 1).
7. Pick out the word or phrase from the passage which means opposite to 'gradual' (used in para 2).

## **Flamingo - Literature**

### **The last lesson**

Answer the following questions in 40-50 words

1. What did Franz notice that was unusual about the school that day?
2. What changes did the order from Berlin cause in school that day?
3. How did Franz's feelings about M Hamel and school change?
4. The people in this story suddenly realize how precious their language is to them. What shows you this? Why does this happen?
5. Franz thinks, "will they make them sing in German, even the pigeons?" what could this mean?
6. How were the parents and M. Hamel responsible for the children's neglect of the French language?
7. What three things in school surprised Franz that day?
8. What a thunder clap these words were to me, which were the words that shocked and surprised the narrator?
9. What tempted Franz to stay away from school?
10. How did M. Hamel behave as the last lesson came to an end?

### **LOST SPRING**

#### **– ANEEZ JUNG**

1. What is the meaning of Saheb's full name? Does he know it, how does he conduct himself?
2. Who is Mukesh? What is his dream? Why does it look like a mirage?
3. What contrast do you notice between the colors of the bangles and the atmosphere of the place where the bangles are kept?
4. Give a thumbnail sketch of the frail young women in the chapter lost spring
5. "Savita is a symbol of innocence and efficiency." Comment
6. "The young men echo the lament of their elders." What do you think is the common complaint? How has it affected their lives?
7. How is Mukesh different from the other bangle makers of Firozabad?
8. Which two distinct worlds does the author notice among the bangle making industry?

## **DEEP WATERS**

### **-WILLIAM DOUGLAS**

1. What is the misadventure that Douglas speaks about?
2. What happened to Douglas at the Y.M.C.A pool?
3. How did the instructor build a swimmer out of Douglas?
4. How did Douglas overcome his fear of water?
5. What sort of terror did Douglas experience as he went down the water?
6. Why does Douglas say, "the instructor was finished, but I was not." How did he overpower tiny vestiges of the old terror?
7. Mention the different lakes and water ways that Douglas swam after he had mustered the courage to swim?

### **Poem- Keeping Quiet**

Questions: (Reference to context 1 X 4 = 4 marks)

- 1) What is the lesson to be learnt from the earth ?
- 2) How is this lesson relevant to the poet's message ?
- 3) How does everything prove to be alive again ?
- 4) Name the poem and the poet.

### **Short answer type questions : (40 - 50 words) (2 marks each)**

- 1) What will counting up to 12 and keeping still help us achieve?
- 2) What is the exotic moment, Pablo Neruda, the poet, wishes for?
- 3) Why is Pablo Neruda against total inactivity?
- 4) What does the poet mean by "Green Wars" ? What will be the consequences of such a war?
- 5) What does "putting on clean clothes" signify?

### **Poem- My Mother at Sixty Six**

Questions: (Reference to context 1 x 4 = 4 marks)

- 1) Who is 'I' and 'Her'?
- 2) What does the poetess compare her mother to and why?
- 3) What has been her childhood fear?
- 4) Identify and explain the literary device used in the above lines .

### Short answer type questions : (40 - 50 words) (2 marks each)

- 1) Comment on the relevance of the title 'My Mother At Sixty Six'?
- 2) What do the parting words of the poet and her smile signify?
- 3) In what way does the poet put her thoughts away?
- 4) Difference between childhood and aged as described in the poem?

### SUBJECT HINDI

#### प्र01 निम्नलिखित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर लिखिए -

मेरे देश की संस्कृति और परंपरा विश्व की सभी संस्कृतियों से प्राचीन है। आज हम पश्चिमी सभ्यता की चकाचौंध में अपनी महान संस्कृति को भूलते जा रहे हैं। भगवान हमें अपनी महान संस्कृति और परंपरा रखने की शक्ति दे। मैं यह नहीं कहता कि हम आधुनिक विचारों से दूर रहें। यदि वे विचार भावी जीवन-पद्धति के अनुकूल हैं तो हमें अवश्य ग्रहण करना चाहिए। लेकिन पश्चिम की नकल नहीं करनी चाहिए। इन्हें सूझ-बूझ के साथ स्वीकार करना चाहिए। इससे देश उन्नत होने के साथ-साथ आधुनिक भी होगा। देशवासियों में वैज्ञानिक दृष्टि पैदा की जाए ताकि वे अज्ञानता और अन्धविश्वास के अंधकार से निकल सकें और देश की प्रगति में सहयोग दें। आध्यात्मिक शक्ति के साथ वैज्ञानिक तर्क-शक्ति देश को ऊँचाई पर पहुँचा सकती है और इससे देश की अपनी पहचान बनती है।

मेरा सपना है कि मेरे देशवासियों में साहस, प्रेम, दया, सेवा, सहिष्णुता, निःस्वार्थता और करुणा की भावना पैदा हो। सभी नवयुवकों को समान रूप से शिक्षा और रोज़गार के अवसर प्राप्त हों। ऊँच-नीच का भेदभाव न हो, जाति और धर्म के नाम पर देश का बँटवारा न हो। मेरा देश अतीत की भाँति पुनः समृद्ध और विकसित देश बने। वह पुनः सोने की चिड़िया कहलाए।

- |  |   |
|--|---|
| (क) भगवान हमें अपनी महान संस्कृति और परंपरा रखने की शक्ति दे - लेखक ने ऐसा क्यों कहा है? | 2 |
| (ख) देश उन्नत और आधुनिक कैसे बन सकता है?   | 2 |
| (ग) देशवासियों को अज्ञानता और अन्धविश्वास से निकालने के लिए क्या करना चाहिए ?            | 2 |
| (घ) लेखक का क्या सपना है?  | 1 |
| (ङ) गद्यांश के लिए उचित शीर्षक लिखिए।  | 1 |

#### प्र02 निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर लिखिए -

5

शहरों में वसंत नहीं आता  
वह आए भी तो कहाँ और कैसे ?  
लोग बंद दरवाज़ों और झरोखों से  
उसे आता भर देख-सा लेते हैं  
उन पौधों पर आकर क्या करे !  
जो फकत शुद्ध हवा के लिए तरसते हैं ?  
या वो पेड़ अपने काटे जाने के  
इंतजार में खड़े हैं ।  
कंक्रीट के इस जंगल में  
अब वसंत नहीं आता ॥

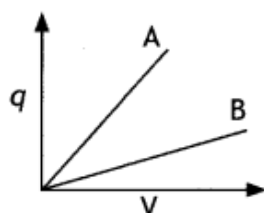
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|--|--|
| (क) शहरी लोग कैसे जीते हैं ?             |  |
| (ख) वसंत पौधों पर क्यों नहीं आता ?       |  |
| (ग) पेड़ किस इंतजार में खड़े हैं ?       |  |
| (घ) कवि ने कंक्रीट का जंगल किसे कहा है ? |  |
| (ङ) उचित शीर्षक लिखिए ।                  |  |

|       |  |    |
|-------|--|----|
| प्र03 | कैमरे में बंद अपाहिज तथा कविता के बहाने नामक कविताओं का प्रतिपाद्य संक्षेप में लिखिए।          | 3  |
| प्र04 | पुस्तक समीक्षा हेतु प्रेमचंद की कहानियों का संकलन मानसरोवर पढ़ें तथा समीक्षा लिखें।            | 3  |
| प्र05 | आत्मविश्वास -सफलता की कुंजी नामक विषय पर फ्रीचर लिखें।   | 3  |
| प्र06 | निम्नलिखित गद्य पाठों का घर पर मौन-पठन करें तथा उनके प्रमुख बिंदुओं का उल्लेख क्रमानुसार करें- | 20 |
|       | 1- भक्तिन  |    |
|       | 2- बाज़ार दर्शन  |    |
|       | 3- काले मेघा पानी दे   |    |
|       | 4- पहलवान की ढोलक  |    |
|       | 5- नमक   |    |

## SUBJECT - PHYSICS

### ONE MARK QUESTIONS

- 1.If the radius of the Gaussian surface enclosing a charge is halved, how does the electric flux through the Gaussian surface change ?
- 2.A charge 'q' is placed at the centre of a cube of side l. What is the electric flux passing through each face of the cube?
- 3.Why are electric field lines perpendicular at a point on an equipotential surface of a conductor?
- 4.What is the amount of work done in moving a point charge Q. around a circular arc of radius 'r' at the centre of which another point charge 'q' is located?
- 5.Why can the interior of a conductor have no excess charge in the static situation?
- 6.On what factors does the capacitance of a parallel plate capacitor depend?
- 7.Draw the equipotential surfaces due to an isolated point charge.
- 8.The given graph shows the variation of charge 'q' versus potential difference 'V' for two capacitors C1 and C2. Both the capacitors have the same plate separation but the plate area of C2 is greater than that of C1. Which line (A or B) corresponds to C1 and why?



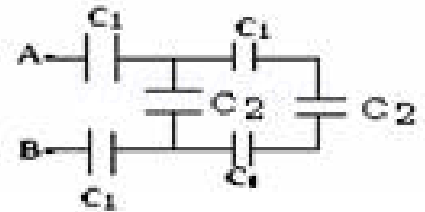
9. Does the charge given to a metallic sphere depend on whether it is hollow or solid?
10. A metal foil of negligible thickness is introduced between the plates of a capacitor at the center . What will be new capacitance of the capacitor ?

### TWO MARKS QUESTIONS

11. In a medium the force of attraction between two point electric charges, distance 'd' apart, is F. What distance apart should these be kept in the same medium so that the force between them becomes 3F?

12. A small metal sphere carrying charge +Q. is located at the center of a spherical cavity in a large uncharged metallic spherical shell. Write the charges on the inner and outer surfaces of the shell. Write the expression for the electric field at the point P1.

13. If  $C_1 = 3\mu\text{F}$  and  $C_2 = 2\mu\text{F}$ , calculate the equivalent capacitance of the given network between points A & B?



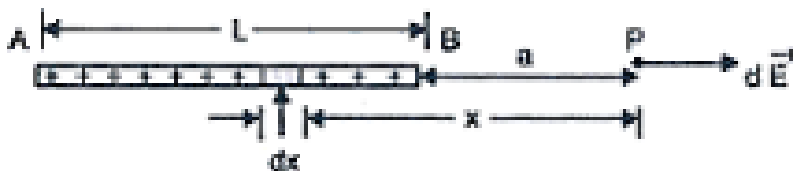
14. Keeping the voltage of the charging source constant. What would be the percentage change in the energy stored in a parallel plate capacitor if the separation between its plates were to be decreased by 10%?

15. A parallel plate capacitor of capacitance C is charged to a potential V. It is then connected to another uncharged capacitor having the same capacitance. Find out the ratio of the energy stored in the combined system to that stored initially in the single capacitor

### THREE MARKS QUESTIONS

16. A uniformly charged conducting sphere of 2.4 m diameter has a surface charge density of  $80.0 \mu\text{C}/\text{m}^2$ . (a) Find the charge on the sphere. (b) What is the total electric flux leaving the surface of the sphere?

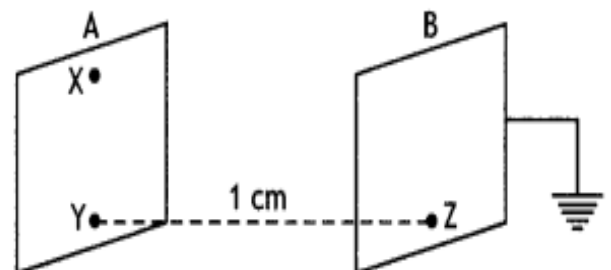
17. A thin insulating rod of length L carries a uniformly distributed charge Q. Find the electric field strength at a point along its axis at a distance 'a' from one end.



18. Two identical plane metallic surfaces A and B are kept parallel to each other in the air, separated by a distance of 1 cm as shown in the figure.

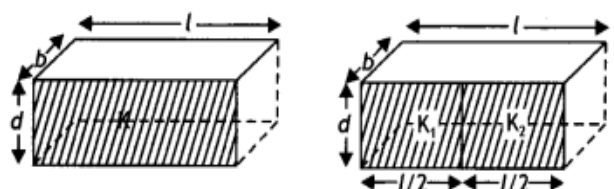
A is given a positive potential of 10 V and the outer surface of B is earthed.

(i) What is the magnitude and direction of the uniform electric field between Y and Z?



19. Obtain the expression for the potential due to an electric dipole of dipole moment p at a point 'x' on the axial line.

(b) Two identical capacitors of plate dimensions  $l \times b$  and plate separation d have dielectric slabs filled

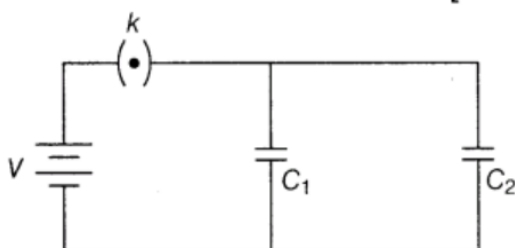




In between the space of the plates as shown In the figures.

Obtain the relation between the dielectric constants  $K$ ,  $K_1$ , and  $K_2$ .

20. Two parallel plate capacitors of capacitances  $C_1$  and  $C_2$  such that  $q = C_2 / 2$  are connected across a battery of  $V$  volts as shown in the figure. Initially, the key ( $k$ ) is kept closed to fully charge the capacitors. The key is now thrown open and a dielectric slab of dielectric constant  $K$  is inserted in the two capacitors to completely fill the gap between the plates. Find the ratio of (i) the net capacitance and (ii) the energies stored in the combination before and after the introduction of the dielectric slab.



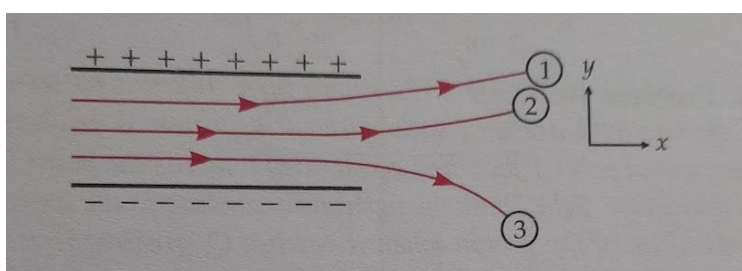
### FIVE MARKS QUESTIONS

21. State Gauss's theorem in electrostatics . Hence derive the expression of electric field intensity due to an infinite plane sheet of charge .

22. Derive the expression of a parallel plate capacitor having dielectric slab in between .

### HOTS

23 Figure shows tracks of three charged particles in a uniform electrostatic field. Give the signs of the three charges. Which particle has the highest charge to the mass ratio ?



(a) Suppose that a particle is attracted towards the positive plate : what must the charge on it be?

(b) Suppose, two particles have identical curved trajectories. Which of the following are necessarily true ?

(i) They have same charge; (ii) They have same mass; (iii) The charges have the same sign; (iv) They have the same  $q/m$  ratio.

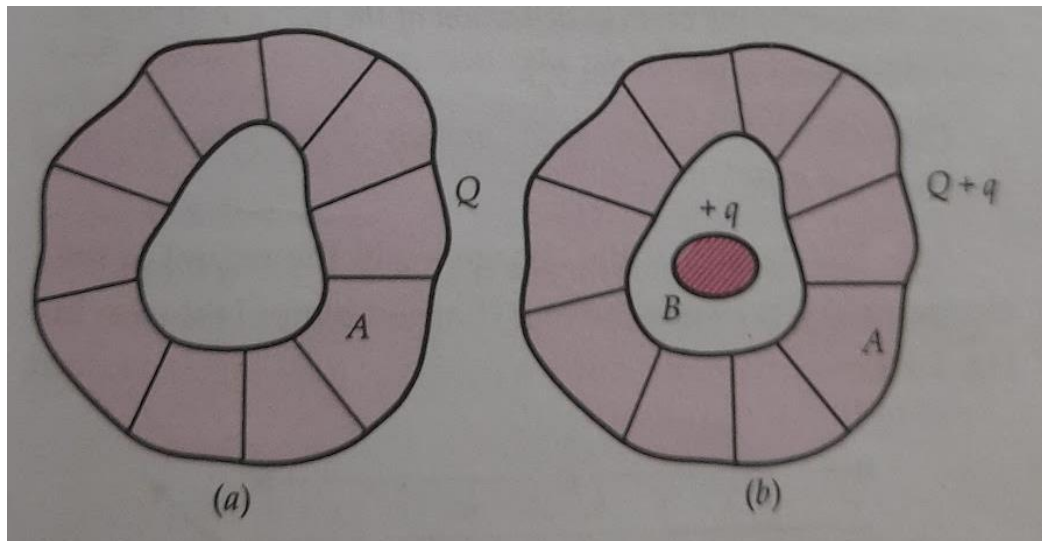
(c) You are given the initial velocity  $v$  of a beam particle and the length of the capacitor  $l$ . What other measurement would enable one to find  $q/m$ ?

24. A hollow charged conductor has a tiny hole cut into its surface. Show that the electric field in the hole is  $\sigma / 2 \epsilon_0 \hat{n}$ , where  $\hat{n}$  is the unit vector in the outward normal direction, and  $\sigma$  is the surface charge density near the hole.

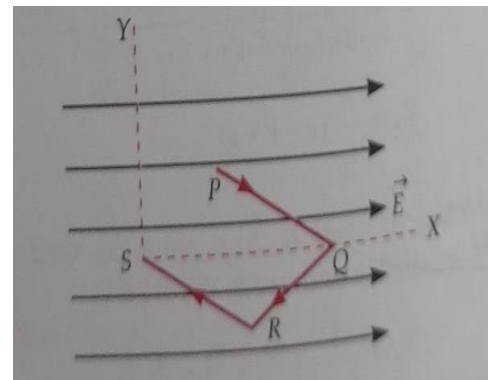
25. (i) A conductor A with a cavity [Fig.] is given a charge  $Q$ . Show that the entire charge must appear on the outer surface of the conductor.

(ii) Another conductor B with charge  $q$  is inserted into the cavity keeping B insulated from A. Show that the total charge on the outside surface of A is  $Q + q$ .

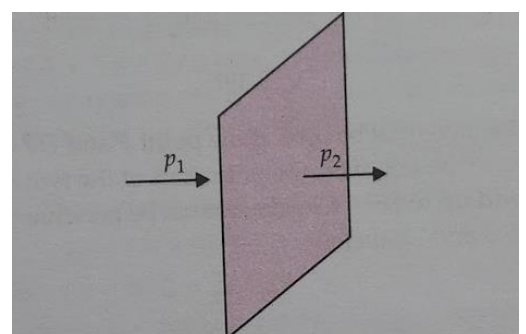
(iii) A sensitive instrument is to be shielded from the strong electrostatic fields in its environment. Suggest a possible way.



26. A point charge  $q$  moves from a point P to a point S along the path PQRS in a uniform electric field  $E$  acting along the positive direction of X-axis. The coordinates of the points P, Q, R and S are  $(a, b, 0)$ ,  $(2a, 0, 0)$ ,  $(a, b, 0)$  and  $(0, 0, 0)$  respectively. Find the work done by the field in the process.

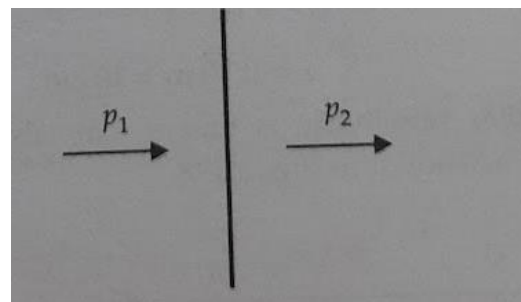


27. (a) An electric dipole is kept first to the left and then to the right of a negatively charged infinite plane sheet having a uniform surface charge density. The arrows  $P_1$  and  $P_2$  show the directions of its electric dipole moment in the two cases.



Identify for each case, whether the dipole is in stable or unstable equilibrium. Justify each answer.

(b) Next, the dipole is kept in a similar way [as shown in Fig.(b)], near an infinitely long straight wire having uniform negative linear charge density .



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### **SUBJECT – CHEMISTRY**

1. Differentiate between molarity and molality of a solution.
2. What is meant by 'reverse osmosis'? What are isotonic solutions?
3. Some liquids on mixing form 'azeotropes'. What are 'azeotropes'?
4. What type of intermolecular attractive interaction exists in the pair of methanol and acetone?
5. 18 g of glucose,  $C_6H_{12}O_6$  (Molar mass =  $180 \text{ g mol}^{-1}$ ) is dissolved in 1 kg of water in a sauce pan. At what temperature will this solution boil? ( $K_b$  for water =  $0.52 \text{ K kg mol}^{-1}$ , boiling point of pure water =  $373.15 \text{ K}$ )
6. An aqueous solution of sodium chloride freezes below  $273 \text{ K}$ . Explain the lowering in freezing points of water with the help of a suitable diagram.
7. Calculate the mass of compound (molar mass =  $256 \text{ g mol}^{-1}$ ) to be dissolved in 75 g of benzene to lower its freezing point by  $0.48 \text{ K}$  ( $K_f = 5.12 \text{ K kg mol}^{-1}$ ).
8. Define an ideal solution and write one of its characteristics.
9. State Henry's law. What is the effect of temperature on the solubility of a gas in a liquid?
10. State Raoult's law for the solution containing volatile components. What is the similarity between Raoult's law and Henry's law?
11. How is the vapour pressure of a solvent affected when a non-volatile solute is dissolved in it?
12. 100 mg of a protein is dissolved in just enough water to make 10.0 mL of solution. If this solution has an osmotic pressure of 13.3 mm Hg at  $25^\circ\text{C}$ , what is the molar mass of the protein?

13. Calculate the freezing point depression expected for 0.0711 m aqueous solution of  $\text{Na}_2\text{SO}_4$ . If this solution actually freezes at  $-0.320^\circ\text{C}$ , what would be the value of Van't Hoff factor? ( $K_f$  for water is  $1.86^\circ\text{C mol}^{-1}$ )
14. A solution of glycerol ( $\text{C}_3\text{H}_8\text{O}_3$ ; molar mass =  $92 \text{ g mol}^{-1}$ ) in water was prepared by dissolving some glycerol in 500 g of water. This solution has a boiling point of  $100.42^\circ\text{C}$ . What mass of glycerol was dissolved to make this solution?  $K_b$  for water =  $0.512 \text{ K kg mol}^{-1}$ .
15. What mass of  $\text{NaCl}$  (molar mass =  $58.5 \text{ g mol}^{-1}$ ) must be dissolved in 65 g of water to lower the freezing point by  $7.5^\circ\text{C}$ ? The freezing point depression constant,  $K_f$ , for water is  $1.86 \text{ K kg mol}^{-1}$ . Assume van't Hoff factor for  $\text{NaCl}$  is 1.87.

### **HIGH ORDER THINKING QUESTIONS**

1. Toothpaste sample has 0.2 gram of chloride concentration. What is the concentration of fluoride in terms of PPM level?
2. What is the van't Hoff factor for a compound which undergoes tetramerisation in an organic solvent?
3. A solution of sucrose (molar mass 342 gram/mol) is prepared by dissolving 68.4 g in 1000 g of water.
  - a) What is the vapour pressure of the solution at 293 K.
  - b) Osmotic pressure at 293 K
  - c) Boiling point of the solution
  - d) Freezing point of the solution
4. Addition of  $\text{HgI}_2$  to aqueous solution of  $\text{KI}$  shows an increase in vapour pressure. Why?
5. Why the vapour pressure of a solution of glucose in water lower than that of water?
6. Storage battery contains solution of  $\text{H}_2\text{SO}_4$  38% by weight at this concentration van't Hoff factor is 2.5. At what temperature will the battery contents freeze? ( $K_f$  for water =  $1.86 \text{ K kg mol}^{-1}$ )

### **SUBJECT - BIOLOGY**

Prepare an Investigatory Project on the topics assigned to you

Complete the Biology Practical file

Complete the Assignments for the month of April and May in the Notebook

### **SUBJECT - MATHS**

- Q1.** Give an example of a relation which is reflexive, but neither symmetric nor transitive.
- Q2.** Give an example of a relation which is not reflexive, but symmetric and transitive.

- Q3.** Show that the relation “greater than” denoted in the set of natural numbers  $N$  is transitive but is neither reflexive nor symmetric.
- Q4.** Prove that the relation  $R$  in the set of natural numbers  $N$  defined by  $(a, b) \in R$  if  $a^2 - 4ab + 3b^2 = 0$ ,  $(a, b \in N)$  is reflexive, but neither symmetric nor transitive.
- Q5.** Consider the set  $N \times N$ , the set of ordered pairs of natural numbers. Let  $R$  be the relation in  $N \times N$  which is defined by  $(a, b) R (c, d)$  if and only if  $a + d = b + c$ . Prove that  $R$  is an equivalence relation.
- Q6.** In the set  $N$  of all natural numbers, let a relation  $R$  be defined by  $R = \{(a, b) : a \in N, b \in N, a - b \text{ is divisible by } 5\}$ . Prove that  $R$  is an equivalence relation.
- Q7.** Consider the set  $N \times N$ , the set of all ordered pairs of natural numbers. Let  $R$  be the relation in  $N \times N$  which is defined by  $(a, b) R (c, d)$  iff  $ad = bc$ . Prove that  $R$  is an equivalence relation.
- FUNCTIONS:**
- Q8.** Prove that the function  $f : N \rightarrow N$ , defined by  $f(x) = 7x$  is one to one, but not onto,  $N$  is the set of all natural numbers.
- Q9.** Prove that the function  $f : X \rightarrow Y$  defined by  $f(x) = 5x$ , where  $X = \{1, 2, 3\}$  and  $Y = \{5, 10, 15\}$  is both one to one and onto.

$$f(x) = \begin{cases} \frac{n+1}{2}, & \text{if } n \text{ is odd} \\ \frac{n}{2}, & \text{if } n \text{ is even} \end{cases}$$

- Q10.** Show that  $f : N \rightarrow N$  defined by  $f(x) = \begin{cases} \frac{n+1}{2}, & \text{if } n \text{ is odd} \\ \frac{n}{2}, & \text{if } n \text{ is even} \end{cases}$  is many-one onto function.
- Q11.** Prove that the function  $f : R \rightarrow R$  defined by  $f(x) = x^3$  for all  $x \in R$  is a bijection.
- Q12.** Let  $f : R \rightarrow R$  be defined as  $f(x) = \frac{2x-1}{3}$ . Prove that  $f$  is a bijective function and hence find the inverse of  $f$ .

### “Matrices and Determinants”

- Q1.** If a matrix has 12 elements, what are the possible orders it can have? What if it has 7 elements?
- Q2.** The number of all possible matrices of order  $3 \times 3$  with each entry 0 or 1 will be. 512
- Q3.** Construct a  $3 \times 4$  matrix whose elements are

$$\begin{array}{ll} \text{(a)} & a_{ij} = i + j \\ \text{(b)} & a_{ij} = i - j \\ \text{(c)} & a_{ij} = ij \end{array}$$

- Q4.** If  $\begin{bmatrix} x-y & 2x+z \\ 2x-y & 3z+w \end{bmatrix} = \begin{bmatrix} -1 & 5 \\ 0 & 13 \end{bmatrix}$ , find  $x, y, z$  and  $w$ . 1,2,3,4

- Q5. If  $\begin{bmatrix} a+b & 2 \\ 5 & ab \end{bmatrix} = \begin{bmatrix} 6 & 2 \\ 5 & 8 \end{bmatrix}$ , find the values of a and b. 2,4 or 4,2

- Q6. For what values of x and y are the following matrices equal?

$$A = \begin{bmatrix} 2x+1 & 3y \\ 0 & y^2-5y \end{bmatrix}, B = \begin{bmatrix} x+3 & y^2+2 \\ 0 & -6 \end{bmatrix}$$

2,2.

- Q7. Evaluate the following:

(a)  $\begin{bmatrix} a^2+b^2 & b^2+c^2 \\ a^2+c^2 & a^2+b^2 \end{bmatrix} + \begin{bmatrix} 2ab & 2bc \\ -2ac & -2ab \end{bmatrix}$

(b)  $\begin{bmatrix} \sin^2 \theta & 1 \\ \cot^2 \theta & 0 \end{bmatrix} + \begin{bmatrix} \cos^2 \theta & 0 \\ -\operatorname{cosec}^2 \theta & 1 \end{bmatrix} + \begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$

- Q8. If  $B = \begin{bmatrix} 2 & 3 & 0 \\ 1 & -1 & 5 \end{bmatrix}$  and  $C = \begin{bmatrix} 1 & -2 & 3 \\ -1 & 0 & 2 \end{bmatrix}$ , find  $3B + 4C$ .

- Q9. Find X and Y if  $X + Y = \begin{bmatrix} 7 & 0 \\ 2 & 5 \end{bmatrix}$  and  $X - Y = \begin{bmatrix} 3 & 0 \\ 0 & 3 \end{bmatrix}$ .

$$\cos \theta \begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix} + \sin \theta \begin{bmatrix} \sin \theta & -\cos \theta \\ \cos \theta & \sin \theta \end{bmatrix}$$

- Q10. Simplify

- Q11. Solve for x and y:

(a)  $\begin{bmatrix} x^2 \\ y^2 \end{bmatrix} - 3 \begin{bmatrix} x \\ 2y \end{bmatrix} = \begin{bmatrix} -2 \\ -9 \end{bmatrix}$

(b)  $x \begin{bmatrix} 2 \\ 1 \end{bmatrix} + y \begin{bmatrix} 3 \\ 5 \end{bmatrix} + \begin{bmatrix} 4 \\ 6 \end{bmatrix} = \begin{bmatrix} 12 \\ 17 \end{bmatrix}$

$x=1,2$  &  $y=3$

$x=1$  &  $y=2$ .

### Matrix Multiplication

- Q12. Express the following as a single matrix:

(a)  $\begin{bmatrix} 1 & 0 & 2 \\ 2 & 0 & 1 \\ 0 & 1 & 2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \\ 6 \end{bmatrix}$

(b)  $\begin{bmatrix} x & y & z \end{bmatrix} \begin{bmatrix} a & h & g \\ h & b & f \\ g & f & c \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix}$

- Q13. If  $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ , show that  $A^2 - 5A + 7I = 0$ . Hence find  $A^{-1}$

- Q14. Verify that  $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$  satisfies the equation  $A^3 - 4A^2 + A = 0$ .

**Q15.** Compute  $A^3 - 5A^2 + 4A + 7I$ , where  $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 1 & 2 \\ 1 & 2 & 0 \end{bmatrix}$ .

**Q16.** Let  $f(x) = x^2 - 5x + 6$ , find  $f(A)$  if  $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$ .

**Q17.** If  $A = \begin{bmatrix} 1 & 0 \\ -1 & 7 \end{bmatrix}$  and  $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ , find  $k$  so that  $A^2 = 8A + kI$ .

**Q18.** If  $A = \begin{bmatrix} -1 & 1 & -1 \\ 3 & -3 & 3 \\ 5 & -5 & 5 \end{bmatrix}$ ,  $B = \begin{bmatrix} 0 & 4 & 3 \\ 1 & -3 & -3 \\ -1 & 4 & 4 \end{bmatrix}$ . Compute  $A^2B^2$ .

**Q19.** Solve the following matrix equation for  $x$ :

$$\begin{bmatrix} 1 & x & 1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 2 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = 0$$

**Q20.** Find a  $2 \times 2$  matrix  $B$  such that

$$\begin{bmatrix} 6 & 5 \\ 5 & 6 \end{bmatrix} B = \begin{bmatrix} 11 & 0 \\ 0 & 11 \end{bmatrix}$$

**Q21.** If  $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ , show that  $A^2 - 5A + 7I = 0$ . Use this result to find  $A^4$ .

#### Transpose of a Matrix

**Q22.** If  $A = \begin{bmatrix} 5 & -3 & 0 \\ 3 & 2 & 1 \\ 3 & 8 & 7 \end{bmatrix}$ ,  $B = \begin{bmatrix} -8 & 5 & 3 \\ 2 & 7 & -9 \\ 8 & 3 & 0 \end{bmatrix}$ , verify that:

(a)  $(A+B)' = A' + B'$

(b)  $(AB)' = B'A'$

**Q23.** Find  $\frac{1}{2}(A + A')$  and  $\frac{1}{2}(A - A')$  where  $A = \begin{bmatrix} 0 & a & b \\ -a & 0 & c \\ -b & -c & 0 \end{bmatrix}$ .

**Q24.** Find  $x$  and  $y$  if the matrix  $A = \frac{1}{3} \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & -2 \\ x & 2 & y \end{bmatrix}$  may satisfy the condition  $AA' = A'A = I_3$

**Q25.** Express the following matrix as the sum of a symmetric and a skew-symmetric matrix:

$$\begin{bmatrix} 1 & 3 & 5 \\ -6 & 8 & 5 \\ -4 & 6 & 5 \end{bmatrix}$$

**Q26.** find the inverse of the matrix  $A = \begin{bmatrix} 1 & 2 \\ 2 & -1 \end{bmatrix}$

$$A^{-1} = \begin{bmatrix} \frac{1}{5} & \frac{2}{5} \\ \frac{2}{5} & -\frac{1}{5} \end{bmatrix}$$

**Q27.** Obtain the inverse of the following matrix  $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$

## QUESTIONS

### FROM PREVIOUS BOARD PAPERS:

#### Very Short Answer Type Questions:

**Q28.** Construct a  $2 \times 3$  matrix  $A$  whose elements are given by  $a_{ij} = \frac{(i-2j)^2}{2}$ . (2002)

$$\begin{bmatrix} \frac{1}{2} & \frac{9}{2} & \frac{25}{2} \\ 2 & 2 & 2 \\ 0 & 2 & 8 \end{bmatrix}$$

**Q29.** Find the values of  $x$  and  $y$  if  $2 \begin{bmatrix} 1 & 3 \\ 0 & x \end{bmatrix} + \begin{bmatrix} y & 0 \\ 1 & 2 \end{bmatrix} = \begin{bmatrix} 5 & 6 \\ 1 & 8 \end{bmatrix}$  (2008)  $x=3, y=3$

**Q30.** Find a matrix such that  $A + 2B + X = O$ , where

$$A = \begin{bmatrix} 2 & -1 \\ 3 & 5 \end{bmatrix} \text{ and } B = \begin{bmatrix} -1 & 1 \\ 0 & 2 \end{bmatrix}$$

$$\begin{bmatrix} 0 & -1 \\ -3 & -9 \end{bmatrix}$$

(2000)

**Q31.** For what value of  $x$  is the following matrix singular?  $\begin{bmatrix} 3-2x & x+1 \\ 2 & 4 \end{bmatrix}$  (2008)  $x = 1$

**Q32.** If  $A = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$ , show that  $(A - A^T)$  is skew-symmetric. (2001)

**Q33.** Find the values of  $x$  and  $y$ , when  $\begin{bmatrix} x & y \\ 3y & x \end{bmatrix} \begin{bmatrix} 1 \\ 2 \end{bmatrix} = \begin{bmatrix} 3 \\ 5 \end{bmatrix}$  (2003C)  $x = 1, y = 1$

**Q34.** If  $A = \begin{bmatrix} 2 & -1 \\ 3 & 2 \end{bmatrix}$  and  $B = \begin{bmatrix} 0 & 4 \\ -1 & 7 \end{bmatrix}$ , find  $(3A^2 - 2B + I)$ . (2005)

$$\begin{bmatrix} 4 & -20 \\ 40 & -11 \end{bmatrix}$$

**Q35.** Express the matrix  $A = \begin{bmatrix} 3 & 2 & 5 \\ 4 & 1 & 3 \\ 0 & 6 & 7 \end{bmatrix}$  as the sum of symmetric and a skew-symmetric matrix. (2008)



**Q36.** If  $A = \begin{bmatrix} 3 & -4 \\ -1 & 2 \end{bmatrix}$ , find a matrix B such that  $AB = I$ . (2006)

**Q37.** Find the value of x, if  $\begin{bmatrix} 1 & x & 1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 2 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = 0$  (2006C) x = -14 or -2

**Q38.** Show that the matrix  $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$  satisfies the equation  $A^2 - 5A + 7I = 0$ . Hence find  $A^{-1}$ .

(2005C)

**Q39.** If  $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ , verify that  $A^2 - 4A - 5I = 0$ . (2008)

**Q40.** If  $A = \begin{bmatrix} 3 \\ 5 \\ 2 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & 0 & 4 \end{bmatrix}$ , verify that  $(AB)^T = B^T A^T$ . (2002)

### CASE STUDIES

- Three friends A, B, & C visited a supermarket for purchasing fresh fruits. A purchased 1 kg apples, 3 kg grapes & 4 kg orange & paid Rs. 800. B purchased 2 kg apples, 1 kg grapes & 2 kg oranges and paid Rs. 500. C paid Rs 700 for 5 kg apples, 1 kg grapes, 1 kg oranges. Find the cost of each fruit per kg using matrix method. Why are fruits good for health?
- The sum of three numbers is 2. If we subtract the second number from twice the first number, we get 3. By adding double the second number and the third number we get 0. Represent it algebraically and find the numbers using matrix method.
- A school wants to award his students for the values of honesty, regularity and hard work with a total award of Rs. 6,000. 3 times the award money for the hard work added to that given for honesty amounts to Rs. 11,000. The award money given for honesty and hard work together is double the one given for regularity. Represent this situation algebraically and find the award money for each value using matrix method.

## **SUBJECT - COMPUTER SCIENCE**

### **Very Short Answer Type Questions (1-Mark)**

- 1a) What is default parameter?  
b) Can a function return multiple values in python?

### **2 a) Give example of positional parameter.**

- b) Carefully observe the code and give the output:

```
def example(a):  
    a = a + '2'  
    a = a*2  
    return a  
example("hello")
```

- 3 a) What is the output of the following program:

```
def myfunc(a):  
    a = a + 2  
    a = a * 2  
    return a  
print(myfunc(2))
```

- b) Find and write the output of the following python code:

```
x = "abcdef"  
i = "a"  
while i in x:  
    print(i, end = " ")
```

**the output is aaaaaa OR infinite loop. Give reason, why and how ?**

- 4 a) Find and write the output of the following python code:

```
a=10  
def call():  
    global a  
    a=15  
    b=20  
    print(a)  
call()
```

- b) From the program code given below, identify the parts mentioned below:

```
def num(x):  
    x=50  
    return x+3
```

```
y=55
```

res=num(y)                      Identify these parts: function header, function call, arguments, parameters, function body, main program .

- c) Trace the flow of execution for the following program:

```
def increment(x):
```

```

        x=x+1
    #main
    x=3
    print(x)
    increment(x)
    print(x)
d)What is the different between the formal parameters and actual parameters .
e) Predict the output of the following code
def codo(n):
    if n == 0:
        print("Finally")
    else :
        print(n)
codo(n-3)
codo(15)

```

### Short Answer Type Questions (2-Mark)

1.a) What possible outputs are expected to be displayed on the screen at the time of execution of the program from the following code? Also specify the minimum and maximum values that can be assigned to the variable c.

```

import random
temp=[10,20,30,40,50,60]
c=random.randint(0,4)
for i in range(0, c):

```

```

    print(temp[i], "#")

```

(i) 10#20#                      (ii) 10#20#30#40#50#                      (iii) 10#20#30#                      (iv) 50#60#

b) Find and write the output of the following python code:

```

def Alter(x,y=20):
    x=x*y
    y=x%y
    print (x,'*',y)
    return (x)

```

```

a=200
b=30
a=Alter(a,b)
print (a,'$',b)
b=Alter(b)
print (a,'$', b)
a=Alter(a)
print (a,'$',b)

```

2a) Rewrite the correct code after removing the errors: -

```

def SI(p,t=2,r):
    return (p*r*t)/100

```

b) What are the possible outcome(s) executed from the following code? Also specify the maximum and minimum values that can be assigned to variable N.

```
import random
NAV = ["LEFT", "FRONT", "RIGHT", "BACK"]
NUM = random.randint(1,3)
NAVG = ""
    for C in range(NUM,1,-1):
        NAVG = NAVG + NAV[C]
print(NAVG)
```

3 a) What output will be generated when the following Python code is executed?

```
def ChangeList():
    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
ChangeList()
```

b) Rewrite the following Python program after removing all the syntactical errors (if any), underlining 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"
```

4a) Observe the following Python code very carefully and rewrite it after removing all syntactical errors with each correction underlined.

```
DEF execmain():
x=input("Enter a number :")
if (abs(x)=x):
    print ("You entered a positive number")
else:
    x=-1
print "Number made positive:" xexecmain()
```

b) Find the output of the following Python program:

```
def makenew(mystr):
    newstr = ""
    count = 0
    for i in mystr:
```

```

    if count%2 != 0:
        newstr = newstr + str(count)
    else:
        if i.islower():
            newstr = newstr + i.upper()
        else:
            newstr = newstr + i
        count += 1
    newstr = newstr + mystr[1]
print("The new string is:", newstr)
makenew("sTUDeNT")

```

**5 a)** Consider the following function headers. Identify the correct statement: -

- |                              |                            |
|------------------------------|----------------------------|
| 1) def correct(a=1,b=2,c):   | 2) def correct(a=1,b,c=3): |
| 3) def correct(a=1,b=2,c=3): | 4) def correct(a=1,b,c):   |

b) What will be the output of the following code?

```

a=1
def f():
    a=10
    print(a)

```

c) Carefully observe the following Python code and answer the questions that follow:

```

global x
x=5
def fun2():
    x=3
    print(x)
x=x+1u
print(x)
fun2()

```

On execution, the above code produces the following output:

6

3 Explain the output with respect to the scope of the variables.

6 a) Write a program using user defined function to :

- Calculate and display average of all the elements in a user defined list containing numbers.
- Write a python function that takes two numbers and print the smaller number. Also write how to call this function.

b) Explain two types of variable scope with example.

c) Write a note on Non- Void Function and Void Function.

### **Application Based Questions/Programs(3 marks each)**

1a )Write a function mul ( ) which accepts list L, odd\_L, even\_L as its parameters. Transfer all even values of list L to even\_L and all odd values of L to odd\_L.

eg. If L = [10, 22, 24, 36, 37, 43, 51]

```
odd_L = [ 37, 43,51]
and even_L = [ 10, 22, 24, 26 ]
```

b) **Write definition of a method EvenSum(NUMBERS) to add those values in the list of NUMBERS, which are odd.**

2 a) Write a python program to sum the sequence given below. Take the input *n* from the user.

b) **Write a program to compute GCD and LCM of two numbers**

3a) How many values a python function can return? Explain how?

b) Find the output of the following code: -

c) **Predict the output of the following code fragment:**

```
def check(n1=1, n2=2):
```

```
    n1=n1+n2
```

```
    n2+=1
```

```
    print(n1,n2)
```

```
check()
```

```
check(2,1)
```

```
check(3)
```

## **DATA FILE HANDLING**

1. What is a file?
2. Why do we need files?
3. What are two main categories of file types?
4. What is the difference between a text file and a binary file?
5. What are the two basic operations which are performed on a file?
6. What is a file buffer?
7. How can a file be opened in a Python program?
8. What are different file opening modes for a text file in Python? Write, in brief, what does each mode do?
9. Differentiate between 'write' mode and 'append' modes of files in Python.
10. What different functions are available to write data in a text file? Describe each in brief.
11. What different functions are available to write read data from a text file? Describe each in brief.
12. Why is it important to close a file?
13. In which mode should a file be opened:
  - (i) To write data into an existing file.
  - (ii) To read data from a file
  - (iii) To create a new file and write data into it.
  - (iv) To write data into an existing file.If the file does not exist, then file should be created to write data into it.
14. Differentiate between seek() and tell().
15. What is the difference between a binary file and a text file?
16. Write following programs :
  - Program to Count number of lines in a text file.
  - Program to Count number of vowels in a text file.

- Program to Count the number of 'is' word in a text file.

## SUBJECT - ACCOUNTANCY

### CHAPTER: CHANGE IN PROFIT SHARING RATIO

#### Short Answer Questions

1. A firm's profits for the last five years were ₹20,000; ₹30,000; ₹40,000; ₹50,000; and ₹60,000. Calculate the value of firm's goodwill on the basis of three years' purchase of weighted average profits after using weight of 1,2,3,4, and 5 respectively.
2. A partnership firm earned net profits during the last three years as follows:

| Year      | Net Profit (₹) |
|-----------|----------------|
| 2007-2008 | 1,90,000       |
| 2008-2009 | 2,20,000       |
| 2009-2010 | 2,50,000       |

he capital employed in the firm throughout the above mentioned period has been ₹1,00,000. Having regards to the risk involved, 15% is considered to be a fair return on the capital. The remuneration of all the partners during this period is estimated to be ₹1,00,000 per annum.

Calculate the value of goodwill on the basis of (i) two years' purchase of super profit earned on average basis during the above mentioned three years and (ii) by capitalization method.

3. Sharma, Verma and Khan were partners in a firm sharing profits and losses in 5:3:2 ratio. They decided to share the future profits equally. For this purpose, the goodwill of the firm was valued at ₹1,20,000. Pass an adjustment entry for the treatment of goodwill due to change in the profit-sharing ratio.
4. Ravi, Shammi, Shashi are partners sharing profits and losses in ratio of 5:3:2. They decided to share future profits and losses in the ratio 2:3:5 with effect from 1<sup>st</sup> April, 2015. Following items appear in the Balance Sheet as at 31<sup>st</sup> March, 2014:

|                       |           |                                 |           |
|-----------------------|-----------|---------------------------------|-----------|
| General Reserve       | ₹1,50,000 | Advertisement Suspense A/c (Dr) | ₹1,00,000 |
| Contingencies Reserve | ₹50,000   | Profit and Loss Account (Dr.)   | ₹5,000    |

Pass necessary Journal entries.

5. Rini and Nikita are in partnership sharing profits in the ratio of 2:3. With effect from 1<sup>st</sup> April, 2012 they agreed to share profits in the ratio of 1:2. For this purpose, the goodwill of the firm is to be valued at ₹80,000. The reserves appear in the books at ₹20,000. Partners neither want to show the goodwill in the books nor to distribute the reserves. You are required to give effect to the change by passing a single Journal Entry.

#### Long Answer Questions

1. Ramesh, Suresh and Dinesh are partners sharing profits and losses in the ratio of 4:3:2., decided to share the future profits and losses in the ratio of 2:3:4 with effect from 1<sup>st</sup> April, 2015. An extract of their Balance Sheet as at 31<sup>st</sup> March, 2015 is:

| Liabilities                  | ₹        | Assets | ₹ |
|------------------------------|----------|--------|---|
| Workmen Compensation Reserve | 1,80,000 |        |   |

Show the accounting treatment under the following alternative cases:

**Case 1.** If there is no other information.

**Case 2.** If a claim on account of workmen compensation is estimated at ₹90,000

**Case 3.** If a claim on account of workmen compensation is estimated at ₹1,98,000

2. X, Y and Z are partners sharing profits equally. They decided that in future Z will get  $\frac{1}{5}$ th share in profits. On the day of change, following is their Balance Sheet:

| Liabilities   |        | ₹        | Assets        |              | ₹      |
|---------------|--------|----------|---------------|--------------|--------|
| Creditors     |        | 1,80,000 | Cash          |              | 6,000  |
| Capital A/cs: |        |          | Debtors       |              |        |
| X             | 12,500 |          |               | 22,500       | 18,500 |
| Y             | 12,500 |          | Less: Reserve |              | 12,500 |
| Z             | 9,000  | 34,000   |               | <u>4,000</u> | 5,400  |
|               |        | 52,400   | Stock         |              | 10,000 |
|               |        |          | Machinery     |              | 52,400 |
|               |        |          | Buildings     |              |        |

On this date, Buildings have been valued at ₹5,000, stock to be reduced by ₹1,500 and reserve for doubtful debts to be reduced by ₹1,000.

Pass Journal entries in the books of the firm regarding the revaluation of assets. Prepare necessary Ledger Accounts and Balance Sheet.

### HOTS (Higher Order Thinking Skills)

- What is the ultimate effect of change in profit-sharing ratio?
- In what ways or means, the gaining partner pays compensation to the sacrificing partner in case of change in profit-sharing ratio?
- Balance Sheet of a firm shows workmen compensation reserve of ₹0,000. There is a workmen compensation liability of ₹0,000. State the ratio and amount of workmen compensation reserve that will be distributed by the partners
- On which basis, the amount of goodwill is decided to be paid to the sacrificing partner?
- There is a profit of ₹25,000 on revaluation of assets and liabilities of the partnership firm of Mohit, Kanti and John. As a result of change in profit-sharing ratio, Mohit sacrifices his  $\frac{3}{10}$ th share in favour of John. The partners decided to record the effect of revaluation without affecting the book values of the assets and liabilities by passing a single Journal entry.
- Can goodwill be sold separately like other tangible assets?

### Long Answer Questions

- From the following information. Calculate the value of goodwill of a firm of Chander and Gupta:
  - At 3 years' purchase of average profits,
  - At 3 years' purchase of super profits,
    - Average capital employed in the business ₹,00,000.
    - Net trading results of the firm for the past years; Profit 2008 - ₹,47,600; Loss 2009-₹,48,100; Profit 2010 - ₹,48,700.
    - Rate of interest expected from capital having regard to the risk involved 18%.
    - Remuneration to each partner for his service ₹00 per month.
- A, B and C were partners in a firm sharing profits in the ratio of 2:2:1. Their Balance Sheet as at 31<sup>st</sup> March, 2015 was as follows:

**Balance Sheet**  
As at 31<sup>st</sup> March, 2015

| Liabilities          |  | ₹      | Assets    |  | ₹        |
|----------------------|--|--------|-----------|--|----------|
| Creditors            |  | 30,000 | Land      |  | 85,000   |
| Bills Payable        |  | 20,000 | Buildings |  | 50,000   |
| Outstanding Expenses |  | 25,000 | Plants    |  | 1,00,000 |
| General Reserve      |  | 50,000 | Stock     |  | 40,000   |
| Capital A/cs:        |  |        | Debtors   |  | 25,000   |



|   |               |                 |      |                 |
|---|---------------|-----------------|------|-----------------|
| A | 50,000        |                 | Cash | 5,000           |
| B | 60,000        |                 |      |                 |
| C | <u>70,000</u> | 1,80,000        |      |                 |
|   |               | <u>3,05,000</u> |      | <u>3,05,000</u> |

From April 1, 2015 the partners decided to share profits in the ratio of 1:2:3. For this purpose, it was agreed that:

- The goodwill of the firm should be valued at ₹0,000.
- Land should be revalued at ₹,00,000. Building should be depreciated by 6%.
- Creditors amounting to ₹,000 were not be paid.

It was decided among the partners that General Reserve has to be distributed among the partners whereas goodwill and revised values of assets and liabilities are not be recorded in the books.

You are required to:

- Record the necessary journal entries to give effect to the above agreement.
- Prepare the capital accounts of the partners.
- Prepare the balance sheet of the reconstituted firm.

### **Evaluation/Value-based Questions**

- Karan, Nakul and Asha were partners in a firm sharing profits and losses in equal ratio. On 1<sup>st</sup> Jan., 2015, they decided to share profits and losses in the ratio of 3:2:1. On that date, there were accumulated losses of ₹5,000 in the firm. Nakul passed the entry in the books of accounts debiting the amount of accumulated losses in the capital accounts of gaining partners only. Was he correct in doing so? Why?
- Sunil, Barkha and Jyoti were partners in the firm. After the death of Sunil, his son Sanjay was admitted in the partnership for 1/10<sup>th</sup> share of profit as a minor partner. After completing his education, he undertook the responsibilities of partnership. After 5 years, Barkha and Jyoti decided that profits and losses shall be shared equally by all the partners. What value has been fulfilled by Barkha and Jyoti

## **SUBJECT - ECONOMICS**

### **National Income**

**Q1 State how the following will be treated in the estimation of National Income / Domestic Income.**

- Interest paid by Bank to its customer on his deposits
- Salaries received by Indians working in branches of Foreign Banks in India
- Expenditure incurred by Foreign Tourists on purchases made in India
- Retirement Pension received by a Senior Citizen
- Expenditure incurred on purchase of second hand car
- Payment of Income Tax by households
- Free medical treatment of employees provided by employer
- Prize won in Lottery
- Purchase of a generator for his office
- Expenditure incurred on repairs of air conditioners installed in office
- Profits earned by Foreign Companies in India
- Salary of Indian Residents working in Russian Embassy in India

13. Fees to a mechanic paid by a firm
14. Interest paid by an individual on a car loan taken from a bank
15. Expenditure on purchasing a car for use by a firm
16. Expenditure on providing Police Services by government
17. Payment of Corporation Tax
18. Payment of Interest by firm to bank
19. Chalks, Duster etc purchased by a school
20. Free Lunch coupons given to employees
21. Sugar purchased by a bakery
22. Old Age Pension
23. Expenditure of adding a floor to the building
24. Compensation of employees to residents of Japan working in Indian Embassy in Japan
25. Rent received by an Indian resident from Russian Embassy in India
26. Profits earned by a branch of State Bank of India in England
27. Expenditure on purchase of fertilizers by farmers
28. Dividend received by an Indian from his investments in Shares of a Foreign Company
29. Money received by a family in India from relatives working abroad
30. Dividend received by a foreigner from Investments in shares of an Indian company

Q2 Money Flows are opposite to Real Flows. How?

Q3 Domestic Income can be greater than National Income. Comment

Q4 What do you mean by Double Counting and How can it be avoided?

Q5 Explain Circular Flow of Income

Q6 Define Externalities. Give an example of Negative Externality. What is its impact on Welfare?

Q7 What are non monetary exchanges? Give an example. Explain the impact on use of GDP as a Index of Welfare (CBSE 2014)

Q8 Government incurs expenditure to popularize Yoga among masses. Analyse its impact on GDP and Welfare (CBSE 2016)

Q9 Sale of Petrol and Diesel cars is rising particularly in big cities. Analyse its impact on GDP and Welfare (CBSE 2016)

Q10 Government spends on Child immunization program. Analyse its impact on GDP and Welfare (CBSE 2016)

Q11 Briefly explain the precautions necessary while using income method / expenditure method / value added method of measuring  $NNP_{FC}$

Q12 Briefly outline the steps involved in estimation of NI by

a) Value added Method

b) Expenditure Method

c) Income Method

**Q13.** How distribution of GDP is a limitation of taking it as an Index of Welfare? Explain

**Q14.** Distinguish between Real GDP and Nominal GDP. Which is better Index of Welfare

## **SUBJECT - BUSINESS STUDIES**

### **1. Prepare the project work on the topic allotted-**

- ❖ **Project A : MARKETING MANAGEMENT**
- ❖ **Project B :- PRINCIPLES OF MANAGEMENT**

- ❖ **Guidelines to be followed:-**

#### **Project A: MARKETING MANAGEMENT**

**(A.)** On the basis of the work done by the students the project report should include the following:

1. Why have they selected this product/service?
2. Find out '5' competitive brands that exist in the market.
3. What permission and licenses would be required to make the product?
4. What are your competitors Unique Selling Proposition [U.S.P.]?
5. Does your product have any range give details?
6. What is the name of your product?
7. Enlist its features.
8. Draw the 'Label' of your product.
9. Draw a logo for your product.
10. Draft a tag line.
11. What is the selling price of your competitor's product?
  - (i) Selling price to consumer
  - (ii) Selling price to retailer
  - (iii) Selling price to wholesaler

What is the profit margin in percentage to the

  - a. Manufacturer.
  - b. Wholesaler.
  - c. Retailer.
12. How will your product be packed?
13. Which channel of distribution are you going to use? Give reasons for selection?
14. Decisions related to warehousing, state reasons.
15. What is going to be your selling price?
  - (i) To consumer (ii) To retailer (iii) To wholesaler
16. List 5 ways of promoting your product.
17. Any schemes for
  - (i) The wholesaler (ii) The retailer (iii) The consumer
18. What is going to be your 'U.S.P.?
19. What means of transport you will use and why?
20. Draft a social message for your label.
21. What cost effective techniques will you follow for your product.
22. What cost effective techniques will you follow for your promotion plan.

At this stage the students will realize the importance of the concept of marketing mix and the necessary decision regarding the four P's of marketing.

A. PRODUCT      B. PLACE      C. PRICE      D. PROMOTION

**Project B: PRINCIPLES OF MANAGEMENT:** The students are required to visit any one of the following:

1. A departmental store.
2. An Industrial unit.
3. A fast food outlet.
4. Any other organisation approved by the teacher.

They are required to observe the application of the general Principles of management advocated by Fayol.

Fayol's principles are:

1. Division of work
2. Unity of command.
3. Unity of direction.
4. Scalar chain
5. Espirit de corps
6. Fair remuneration to all
7. Order
8. Equity
9. Discipline
10. Subordination of individual interest to general interest.
11. Initiative.
12. Centralization and decentralization.

OR

They may enquire into the application of scientific management techniques by F.W. Taylor in the unit visited.

Scientific techniques of management.

1. Functional foremanship.
2. Standardization and simplification of work.
3. Method study.
4. Motion Study.
5. Time Study.
6. Fatigue Study.
7. Differential piece rate plan.

#### **(B.) PRESENTATION AND SUBMISSION OF PROJECT REPORT OF PROJECT A and B**

The following essentials are required to be fulfilled for its preparation and submission.

1. The total length of the project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence-
  - a. The cover page should include the title of the Project, student information, school and year.
  - b. List of contents.
  - c. Acknowledgements and preface (acknowledging the institution, the places visited and the

- persons who have helped).
- d. Introduction.
- e. Topic with suitable heading.
- f. Planning and activities done during the project, if any.
- g. Observations and findings of the visit.
- h. Conclusions (summarised suggestions or findings, future scope of study).
- i. Photographs (if any).
- j. Appendix.
- k. Teacher's observation.
- l. Signature of the teacher.

#### **Instructions:**

1. The work has to be done on A4 size interleaf sheets.
2. It should be written in neat handwriting.
3. The file should not be spiraled.
4. The project should be hand written and no print-outs to be used for content writing.

## **SUBJECT - ENTREPRENEURSHIP**

### **CHAPTER: ENTREPRENEURIAL OPPORTUNITY**

#### **Short Answer Questions**

1. "This will help the entrepreneur to understand the market and produce goods and services in sync with the market trends."  
 (a) Identify the activity to which the above statement is related.  
 (b) Enumerate the ways in which the above activity can be conducted. 3
2. "It is the process of entrepreneurship which involves translation of useful ideas into application which has commercial value."  
 (a) Identify the process.  
 (b) Explain the elements of the process identified in (a). 3
3. "Entrepreneurship does not emerge and grow spontaneously. Rather it is dependent upon several environmental factors."  
 Identify and explain those factors. 4
4. "If you don't adapt, you don't endure." Evaluate the validity of the statement. 4
5. "An opportunity may be derived from the needs and problems of the society." Comment
6. Explain in brief the factors involved in sensing opportunity. 4

## **Application Based Questions**

1. Since her college days mehak loved the thrill of adventure sports. She was an avid reader which helped her to keep track of various new adventure sports taken up all around the world. She had recently read an article on increasing trend towards 'space tourism and adventurous holidays'. Using her personal experiences and her passion for adventure sports she decided to start a company called 'YOLO' For the same purpose she also decided to collect statistics to see how much of these sports were accepted in our country. Identify the ways in which she was able to spot the trend.
2. Shahida, a student of School of Rug Weaving Institute, Turkey, visited her grandparents in Kashmir for the first time. Breathtaking mountain scenery, clear lakes, lush vegetation and magnificent forests mesmerized her. The valley is home to a rich biodiversity including a large number of bird species, many of which are unique to Kashmir. It is home to Yak and sheep that are taken care of by nomads. Kashmiri lifestyle is essentially slow paced and reflects religious diversity. Kashmiris are known to enjoy their music in its various local forms, and the traditional dress of both genders is often quite colorful. Tulip, Saffron, dry fruits and artistic woodwork are its hallmark.

She also observed that the government was stable and all the tourist places were well guarded by the army.

She found it to be an ideal place to start a unit for carpet weaving and employ local people to preserve the ethnic touch. After the devastating floods a considerable population was rendered jobless, her unit would help to revive their economic condition. She started scanning and screening the environment and collected the following information.

- A. Help her categorize the information making use of PESTEL MODEL.(Any three)
  - B. Also state a value communicated by Shahida.
3. Bunty, a fitness freak NRI, had done his masters in nutritional sciences from U.K., during his vacations, he was disappointed to see that no Gymnasium in Delhi had a workout module to suit his requirement. Anyhow, Fitness Fine Gymnasium of his friend offered him freedom to exercise the way he wanted. In short time, Bunty became popular amongst the other members because of his knowledge, experience, competency, tactics and tips on exercising.

He now explored deeply his curiosity of starting a Gymnasium in Greater Kailash 2, having a fusion of both diet and exercise under one roof. He conducted a market research and subconsciously assimilated a whole data bank of information pertaining to lifestyle, interests, etc. of people in and around the area. He approached his father for financial help of ₹25 lacs as he had ₹20 lacs only. The ground floor of his flat was to be converted into a Gymnasium. He started networking and negotiating with the manufacturers who could provide him with customized machines of his choice.

"One of the first task demanded of an entrepreneur is to manifest creative ability through the conceiving of new product-market propositions" - Identify and explain the steps involved in this process being initiated by Bunty.

4. Hina, was manufacturing beauty products and was always on the lookout to improvise her products. She used social media and online surveys to understand the latest trend in customer needs and overall in the cosmetics industry. Through the surveys, she understood that the customers prefer natural ingredients like multani mitti or neem in place of chemicals in the beauty products.

Responding to the customers' needs, she developed a 'Multani Mitti cum neem face pack' in an attractive package. It was highly priced as she knew that the customers will be ready to pay the price for the quality. Her face pack was an instant success.

Identify the 'Way' in which Hina spotted this trend.

5. Hema Enterprises is dealing in Health Drinks. The enterprise has been manufacturing 'Mother's Choice' a malt based health drink. Adapting to the latest market trends she decided to bring out an improved form of fortified health drink with vitamin B-12, iron and minerals to increase immunity. She believed that by modifying the product she will be able to create a new product. Identify the concept and define it.
6. Disha, a graduate of Horticulture from Kurushetra University came across a barren land near when she visited this place. Disha was fond of strawberries and was inquisitive to understand the reason why strawberries could not be grown there. She was informed by the local authorities that the land was infertile for raising strawberries. She took this as a challenge and believed in its success. Best quality strawberries now mark the beauty of that barren piece of land.
  - A. Identify and explain the 'idea field' from where the idea has been generated.
  - B. Also explain and give one example each for four other idea fields which may generate useful product ideas.
7. Vinod is working as the chief accountant in ABC infrastructure Ltd. He came to know that the company is planning to announce an interim dividend. He purchased 2000 shares of the Co. at the market price of ₹15 with the expectation of an appreciation in the market price. When the price increased to ₹37 he sold his holdings & made a handsome profit. Name the related concept which social values have been affected here?
8. 'It is the process of entrepreneurship which involves the translation of a useful idea into an application which has commercial value.' Identify the process.
9. 'The process of generation of ideas' can be streamlined by developing an awareness about it and these work as the convenient frames of references for this.
  - A. Identify the concept stated in the above lines.
  - B. Explain any three sources of the concept identified which are used by an Entrepreneur.
10. Ramsaran, an auto-mechanic, was working in a city. But due to ill health of his parents he was compelled to shift to his village. The village was approximately two Kilometers away from the nearest highway. He noticed that vehicles which broke down had no repair facility in that area. This gave him an idea to open a Auto-Service-Centre for earning his livelihood. He motivated some young boys of his village to join him for providing this service. He trained them and employed them in his workshop.

Basic ideas emerge from different sources.

- A. Identify the category of source under which Ramsaran's ideas emerge.
- B. State two other categories from where basic ideas emerge.
- C. Identify any one value which was communicated to the society by Ramsaran's behaviour.

11. Balwant Singh of Bikaner thought of air-conditioned houses which do not require electricity. He wanted to explore the idea of construction of such eco-friendly houses which will remain cool in summers and warm in winters. He conceived the idea in 2010 but the final product could take shape in 2014. Name the stage in 'The Creative Process' described in the above lines.

## **SUBJECT – INFORMATICS PRACTICES**

General Instructions:

- Attempt all the questions.

Topic : SQL Commands

- Q1. Which command in SQL is used to add record?  
(a) add (b) append (c) insert (d) None of these
- Q2. Which command in SQL is used to add a new column/field in a Table?  
(a) Alter table (b) append table (c) insert table (d) None of these
- Q3. Commands allows to perform tasks related to data manipulation.  
(a) DDL (b) DML (c) TCL (d) None of these
- Q4. Table constraint to prevent duplicate entries of rows.  
(a) NOT NULL (b) NULL (c) Unique (d) All of these
- Q5. The ..... keyword eliminates duplicate rows from the results of a Select statement.  
(a) Different (b) Distinct (c) Unique (d) None of these
- Q6. A table student consists of 5 rows and 6 columns. Later on 1 column added and 2 rows removed. What will be the degree and cardinality of the table student?  
  
(a) Degree 6 Cardinality 5  
(b) Degree 7 Cardinality 5  
(c) Degree 7 Cardinality 7  
(d) Degree 7 Cardinality 3
- Q7. SQL command to open database employee.  
(a) use employee (b) open employee (c) create employee (d) None of these
- Q8. Student table consists of 4 columns Rollno, Name, Date\_of\_birth and Fee. What will be the SQL command to remove column Fee from the table?  
(a) Alter table student  
remove column Fee;



(b) Modify table student  
remove column Fee;

(c) Alter table student  
drop Fee;

(d) Modify table student  
drop Fee;

- Q9. What will be the command to view all the records from the table client?  
(a) select all from client; (b) select \* from client;  
(c) show all from client; (d) None of these
- Q10. SQL function to count the total number of records present in the table given table.  
(a) count(Movie)(b) count(\*)  
(c) count(All) (d) None of these
- Q11. Consider a table Consumer with fields (ConsumerName, NoofUnits, Address, ConsumerNo.)  
Select the suitable primary key for the table consumer.  
(a) ConsumerName (b) NoofUnits (c) Address (d) ConsumerNo
- Q12. What will be the SQL command to display all the records from Customer table as per customer name in ascending order?  
(a) select \* from customer arrange customername;  
(b) select \* from customer order by customername asc;  
(c) select \* from customer order by customername;  
(d) select \* from customer group by customername;
- Q13. .... clause is used in combination with Group by clause in a Select statement to put condition on groups.  
(a) order by (b) where (c) having (d) None of these
- Q14. .... clause is used to filter the rows / records from the table.  
(a) order by (b) where (c) having (d) None of these
- Q15. Drop table is a ..... command.  
(a) DDL (b) DML (c) TCL (d) None of these
- Q16. What will be the SQL command to display the structure of the table emp\_details.  
(a) show emp\_details; (b) desc emp\_details; (c) view emp\_details (d) Any of these

Table : PRODUCT

| Prod_ID | Product_Name | Manufactures | Price |
|---------|--------------|--------------|-------|
| TP01    | Pen          | Cello        | 5.00  |
| TP02    | Gel Pen      | Luxar        | 10.00 |
| TP03    | Pen          | Luxar        | 20.00 |
| TP04    | Pencil       | Natraj       | 4.00  |
| TP05    | Sketch       | Camel        | 2.00  |

Table : CLIENT

| Client_ID | C_NAME | CITY      | Prod_ID |
|-----------|--------|-----------|---------|
| C101      | Rakesh | Delhi     | TP01    |
| C102      | Sunil  | Mumbai    | TP05    |
| C103      | Dinesh | Delhi     | TP02    |
| C104      | Suresh | Kolkata   | TP01    |
| C105      | Vimal  | Bangalore | TP03    |

Q17 to Q22 are based on above tables PRODUCT and CLIENT

Q17. What will be the output of the SQL command: select count(\*) from client;

(a) 4 (b) 5 (c) 6 (d) 8

Q18. What will be the output of the SQL command: select max(price), min(price) from Product;

(a) 2.00 20.00 (b) 20.00 2.00 (c) 5.00 10.00 (d) No output

Q19. What will be the output of the SQL command?

select price + 10 from product where Product\_Name = "Pen";

Q20. What will be the output of the SQL command?

select C\_Name from Client where C\_Name like "S%";

Q21. What will be the SQL command to view Client\_ID and Client\_Name for all the clients living in City Delhi, Mumbai or Chennai?

- Q22. What will be the output of the following SQL command?
- ```
select Product_Name, Client_Name from PRODUCT P, CLIENT C
where P.Prod_ID = C.Prod_ID and Price >=10;
```
- Q23. What will be the SQL command to remove all the records from the table Movie?
- (a) drop table Movie;    (b) delete from Movie;  
(c) drop \* from Movie;    (d) delete \* from Movie;
- Q24. Consider a table Player with fields (Player\_Name, Player\_No, NoofMatches)
- What will be the SQL command to display the Player details of all the Players name ends with 'th'?
- Select \* from player where player\_name like "%th";
- Q25. Consider a table Book with fields (Book\_no, Title, Author, Price)
- What will be the SQL command to add 100 in the price of all the books.
- Update book
- Set price = price + 100;

**Attempt case studies in your registers.**

### **CASE STUDIES**

#### **CH-2 (PRINCIPLES OF MANAGEMENT)**

Q. 1. In your school, you observe that books are kept in office, chalks in the library and office records in the staff room.

1. Which principle of management is violated here and why?
2. How will that affect the achievement of school objectives?
3. As a manager, what steps will you take to rectify the shortcomings? (3 marks)

Q. 2. The production manager of an automobile company asked the foreman to achieve a target production of 200 scooters per day. But he did not give him the authority of requisition tools and materials from the stores department. Can the production manager blame the foreman if he is not able to achieve the desired target? Explain briefly the principle relating to the situation. (3 marks)

Q. 3. Soniya Ltd. was engaged in the business of manufacturing auto components. Lately, its business was expanding due to increased demand for cars. The competition was also increasing. In order to keep its market share intact, the company directed its workforce to work overtime. But this resulted in many problems. Due to increased pressure of work the efficiency of workers declined. Sometimes, the subordinates had to work for more than one superior. The workers were becoming undisciplined. The spirit of teamwork, which had characterized the company previously, had begun to wane.

Identify any three principles of management (as given by Henry Fayol) which were begin violated, quoting the lines from the above case. (3 marks)

Q. 4. The production manager of Harsh Ltd. instructs a salesman to go slow in selling the product, where the marketing manager is insisting on fast selling to achieve the target. Which principle of management is being violated in this case? (1 mark)

Q. 5. Kanika and Priyanka are typists in a company having same educational qualifications. Kanika is getting Rs. 16000 per month and Priyanka Rs. 10000 per month as salary for the same working hours. Which principle of management is violated in this case. (1 mark)

Q. 6. Rishabh, a manager, very often speaks to people at all levels, passing on instructions regarding his department and also the other departments. Which principle of management is being overlooked? (1 mark)

Q. 7. The management and workers have entered into an agreement that workers will do overtime to cover up losses of the company. In return, the manager will increase the wages. But management later refused to increase the wages. Name the principle violated in this situation. (1 mark)

Q. 8. In Simran Ltd., an employee has the objective of maximizing his salary, but the organizational objective is to maximize output at competitive cost. There was some dispute on this for a while. Eventually, the organization's interest was given priority over employees' interest. Name the principle related to this situation. (1 marks)

Q. 9. Radhika opens a jewellery showroom in Jaipur after completing a course in jewellery designing. She has employed eleven persons in her showroom. For greater productivity, she divides the work into small tasks and each employee is trained to perform his/her specialized job. The sales persons are allowed to close a deal with a buyer by giving a maximum of 10% discount, whereas the decision to given any further discount rests with Radhika as the final authority. In the earlier days of starting of the business, five of her employees were asked to put in extra hours of work. In return she had promised to give them a special incentive within a year. Therefore, after six months when the business was doing well, she awarded a cash bonus to each of these employees to honour her commitment. However, when it comes to setting the conflicts among her employees, she tends to be more biased towards her female employees.

In context of the above case:

1. Identify and explain the various principles of management that are being applied by Radhika by quoting lines from the paragraph.
2. Identify and explain the principle of management which is being violated by Radhika by quoting lines from the paragraph.
3. State any one effect of the violation of the principle of management by Radhika as identified in part (b) of the question.

Q. 10. Neeraj is selected for the post of software developer in an IT Company. On the first day of his joining Mehul, his project manager tells Neeraj that during the course of his work he will come across many such opportunities which may tempt him to misuse his powers for individual or family's benefit at the cost of larger general interest of the company. In such situations, he should rather exhibit exemplary behavior as it will raise his stature in the eyes of the company. Also, for interacting with anyone in the company on official matters, he should adopt the formal chain of authority and communication.

In context of the above case:

1. Identify and explain the various principles of management that Mehul is advising Neeraj to follow while doing his job.
2. List any two values that Mehul wants to communicate to Neeraj.

Q. 11. Davinder is a class twelfth commerce student in a reputed school in Punjab. Satinder is his elder brother who is doing his Masters in Hospital administration from Delhi after completing his B. Sc course. During vacations when Satinder comes home, Davinder shows him the business studies project that he is preparing on the topic 'Principles of Management'. Satinder tells him that these principles are also a part of MBA course curriculum at the beginner's level as they form the core of management in practice. But he finds these principles different from those of pure science.

In context of the above case:

1. Outline the concept of principles of management.
2. Why does Satinder find the principle of management different from those of pure science?
3. Why do the principles of management form the core of management in practice?

Explain by giving any two points highlighting the importance of principles of management.

Q. 12. Nutan Tiffin Box service was started in Mumbai by Mumbai dabbawalas. The Dabbawalas who are the soul of entire Mumbai aim to provide prompt and efficient services by providing tasty homemade tiffin to all office goers at right time and place. The service is uninterrupted even on the days of bad weather, political unrest and social disturbances. Recently they have started online booking system through their website 'mydabbawals.com'. Owing to their tremendous popularity amongst the happy and satisfied customers and members, the dabbawalas were invited as guest lecturers by top business schools. The Dabbawalas operate in a group of 25-30 people along with a group pleader. Each group teams up with other groups in order to deliver the tiffin on time. They are not transferred on frequent basis as they have to remember the addresses of their customers. They follow certain rules while doing trade-No alcohol during working hours; No leave without permission; Wearing of white cap & carrying ID cards during business hours.

Recently on the suggestion of a few self-motivated fellow men, the dabbawalas thought out and executed a plan of providing food left in tiffin's by customers to slum children. They have instructed their customers to place red sticker if food is left in the tiffin, to be fed to poor children later.

1. State any one principle of management given by Fayol & one characteristic of management mentioned in the above case.

2. Given any two values which the Dabbawalas want to communicate to the society.

(4 marks)

Q. 13. 'Aapka vidyalaya' believes in holistic development of students and encourages team building through a mix of curricular, co-curricular and sports activities. On its founders day a stage performance had to be put up. A committee of ten prefects was constituted to plan different aspect of the function. They all decided to use recycled paper for decoration. There was a spirit of unit and harmony and all members supported each other. With mutual trust and belongingness the programme was systematically planned and executed. Kartik, one of the prefects realized that unknowingly the group had applied one of the principles of management while planning and executing the programme. He was so inspired by the success of the function that he asked his father to apply to same principle in his business. His father replied that he was already using this principle.

1. Identify the principle of management applied for the success of the programme.
2. State any two features of management highlighted in the above para.
3. Identify any two values which 'Aapka Vidyalaya' communicated to the society.

(4 marks)

Q. 14. Nikita and Salman completed the MBA and started working in a multinational company at the same level. Both are working hard and are happy with their employer. Salman had the habit of backbiting and wrong reporting about his colleagues to impress his boss. All the employees in the organization knew about it. At the time of performance appraisal the performance of Nikita was judged better than Salman. Even then their boss, Mohammed Sharif decided to promote Salman stating that being a female Nikita will not be able to handle the complications of a higher post.

1. Identify and explain the principle of management which was not followed by this multinational company.
2. Identify the values which are being ignored quoting the liens the above para. (5 marks)

Q. 15. Sigma Ltd. is a large company manufacturing electric motors. The company has several departments – Production, Marketing, Finance and HR. Mr. Shashank, CEO of the company set the target sale of 10 crore in a month. To increase the sales, the marketing manager, Mr. Ishaan insists on offering 10% discount to customers. But the finance manager, Mr. Mohak does not approve such discount as it would mean loss of revenue. Because of dual subordination, the sales manager, Mr. Anshik could not achieve the sales target.

1. Which concept of management Sigman Ltd. is lacking? State it.
2. Which principle of management has been overlooked by this company? State it.
3. Which principle of management has been overlooked by this company? State it. (6 marks)

Q. 16. ABC Ltd. is engaged in producing electricity from domestic garbage. There is almost equal division of work and responsibility between workers and management. The management even takes workers into confidence before taking important decisions. All the workers are satisfied as the behavior of the management is very good.

1. State the principle of management described in the above para.
2. Identify any two values which the company wants to communicate to the society. (3 marks)

Q. 17. Voltech India Ltd. is manufacturing LED bulbs to save electricity and running under heavy losses.

To revive from the losses, the management thought of shifting the unit to a backward area where labour is available at a low cost. The management also asked the workers to work overtime without any additional payment and promised to increase the wages of the workers after achieving its mission. Within a short period, the company started earning profits because both the management and the workers honored their commitments.

1. State the principle of management described in the above para.
2. Identify any two values that the company wants to communicate to the society. (3 marks)

Q. 18. Kushal Ltd. is a leading automobile company in which the various departments are setting up their own objectives without paying any interest to the organizational objectives.

1. Which aspect of management the company is lacking? What will be its impact on the organization?
2. Identify the principle of management which has been overlooked by this organization.
3. State any two values neglected by the people of this organization. (5 marks)

Q. 19. Telco Ltd. is manufacturing files and folders from old clothes to discourage use of plastic fields and folders. For this, they employ people from nearby villages where very less job opportunities are available. An employee, Harish, designed a plan for cost reduction but it was not welcomed by the production manager. Another employee gave some suggestion for improvement in design, but it was also not appreciated by the production manager.

1. State the principle of management described in the above para.
2. Identify any two values that the company wants to communicate to the society. (3 marks)

Q. 20. Khandelwal Ltd., a tyre manufacturing concern has been established for more than ten years. Having made good profits in the past, company wanted to expand further and hence did not declare bonus for the previous year. The workers got agitated and trade union declared strike and demanded bonus and other facilities. The management decided not to give into their demands.

1. Which principle of scientific management is overlooked in the given case?
2. State any two values overlooked/ignored by the management in the above case. (3 marks)

## **SUBJECT: POLITICAL SCIENCE**

Project Work: 20 Marks

Class will be divided into six groups with four / five students in each group.

### **TOPIC ALLOTTED**

Group I : Environment : Crisis and solutions

Group II: Security : Burning global need and role of Leadership

Group III : Foreign Policy : Need and importance

Group IV : Niti Aayog : Thinking tank of government

Group V : Coalition government : A boon or a bane

Group VI : UNO : Relevance and reforms

Group VII : EU : Changing phases

Group VIII : SAARC : India and its position and role

Group IX : BRICS : Conflicts and solutions

### **GENERAL GUIDELINES:**

- The project is to be done on inter-leaf sheets.
- The total length of the project will be 20-25 pages.
- Students have to preserve the initial drafts of the project as well as any research papers that they may have used.
- Students have to be prepared to give a presentation of the project in the class.
- A summary / synopsis (one page) of the project has to be prepared covering:  
The objective statement    Their observations and findings    The learning outcomes
- Any other learning from this exercise such as skills of team work, problem solving, time management, information collection, processing, analysing and synthesizing relevant information to derive meaningful conclusions;
- The projects must be neat and well-presented and must be completely hand-written.
- No whiteners to be used or written matter to be crossed out. In case of any mistakes, redo the sheet.
- Do not number sheets or write dates unless so instructed.
- Colour illustrations, maps, charts may be hand drawn or printed (if it is relevant for any aspect of your project) are welcome to make them look attractive.

### **Presentation:**

**1 . In the form of art form like cartoons, caricatures, posters....digital prints or sheets**



**2. Spontaneous speeches can also be a part of presentation. Panel discussion by students can also be presented. Role play ,songs, enactment, PPT, video.....**

### **Details of Project Work**

1. The project can be **individual / pair / group of 4-5 each**. The Project can be made on the topics given in the syllabus of a particular class.
2. The suggestive list of activities for project work is as follows: - **Role Play, Skit, Presentation, Model, Field Survey, Mock Drills/Mock Event Mine craft etc.**

**Steps involved in the conduct of the project: Students may work upon the following lines as a suggested flow chart:**

- **Choose a Title/Topic Need of the Study,**
- **Objective of the Study**
- **Hypothesis Content -Timeline, Maps, Mind maps, Pictures, cartoons etc.**
- **(Organization of Material/Data Present Material/Data)**
- **Analysing the Material/Data for Conclusion**
- **Draw the Relevant Conclusion**
- **Bibliography**

### **Expected Checklist for the Project Work:**

- Introduction of topic/title
- Identifying the causes, events, consequences and/or remedies
- Various stakeholders and effect on each of them
- Advantages and disadvantages of situations or issues identified
- Short-term and long-term implications of strategies suggested during research
- Validity, reliability, appropriateness, and relevance of data used for research work and for presentation in the project file
- Presentation and writing that is succinct and coherent in project file
- Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

### **Assessment of Project Work:**

- Project Work has broadly the following phases: Synopsis/ Initiation, Data Collection, Data Analysis and Interpretation through activities ,quiz, survey ,interviews and Conclusion.
- Viva

## **SUBJECT: HISTORY**

**Project Work: 20 Marks**

**One Project to be done throughout the session, as per the existing scheme.**

The students have been given topics for CBSE project

□The class has been divided into 06 pairs

**GROUP I : Mahabharata :Tell the tales**

**GROUP II : Bhakti –Sufi Traditions and its impact : Multiple interpretations and commentaries**

“The Mystical Dimensions of Sufism

**GROUP III :Mughals -- their economic policies and its impact**

**GROUP IV :Vijaynagar Empire :Hampi :Few facts unexplored : The Architectural Culture**

**GROUP V : Revolt of 1857 : A visual treat**

**GROUP VI: Gandhiji and his teachings / philosophy /ideologies : Global legacy of Gandhian ideas**

**GENERAL GUIDELINES:**

- The project is to be done on inter-leaf sheets.
- The total length of the project will be 20-25 pages.
- Students have to preserve the initial drafts of the project as well as any research papers that they may have used.
- Students have to be prepared to give a presentation of the project in the class.
- A summary / synopsis (one page) of the project has to be prepared covering:  
**The objective statement    Their observations and findings    The learning outcomes**
- Any other learning from this exercise such as skills of team work, problem solving, time management, information collection, processing, analysing and synthesizing relevant information to derive meaningful conclusions;
- The projects must be neat and well-presented and must be completely hand-written.
- No whiteners to be used or written matter to be crossed out. In case of any mistakes, redo the sheet.
- Do not number sheets or write dates unless so instructed. ·
- Colour illustrations, maps, charts may be hand drawn or printed (if it is relevant for any aspect of your project) are welcome to make them look attractive.

**Steps involved in the conduct of the project: Students may work upon the following lines as a suggested flow chart:**

- **Choose a Title/Topic Need of the Study,**
- **Objective of the Study**
- **Hypothesis Content -Timeline, Maps, Mind maps, Pictures, etc.**
- **(Organization of Material/Data Present Material/Data)**
- **Analysing the Material/Data for Conclusion**
- **Draw the Relevant Conclusion**
- **Bibliography**

**Expected Checklist for the Project Work:**

- Introduction of topic/title
- Identifying the causes, events, consequences and/or remedies
- Various stakeholders and effect on each of them

- Advantages and disadvantages of situations or issues identified
- Short-term and long-term implications of strategies suggested during research
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- Presentation and writing that is succinct and coherent in project file
- Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

### **Assessment of Project Work:**

- Project Work has broadly the following phases: Synopsis/ Initiation, Data Collection, Data Analysis and Interpretation through activities quiz, survey interviews and Conclusion.
- Viva

## **SUBJECT - PSYCHOLOGY**

### Instructions

Questions 1 to 3 have to be done in the respective class notes register.

Question 4 to be done on A4 SIZE sheets and to be filed properly and neatly.

Pictures and any other appropriate form of creativity can be used for question 4 wherever it's required as per the student's needs

All work to from question 1 to 4 to be handwritten only

1. Complete the textbook question answer of chapter 1 (all) and chapter 2 upto the portion covered in class.
2. Complete your notes register upto date with the topics covered in class.
3. Answer the following questions of chapter 1 and 2
  - Differentiate between psychometric and information processing approach to Intelligence.
  - Explain Gardner's theory of intelligence.
  - Explain Triarchic theory of intelligence
  - The MA of an 10 year old boy with IQ=100 is \_\_\_\_\_ justify the answer calculated and obtained as well
  - Discuss the PASS model of Intelligence
  - How is aptitude different from interest? Which of the two is important in deciding about one's career?
  - Define self
  - Discuss various types of self
  - What is self esteem and its components
  - What is self efficacy
  - What is self regulation
  - What is self control
  - Discuss the various techniques of self control

- What is the meaning of the term personality
  - What are the three approaches to personality
  - Describe Allport's theory of personality
  - Discuss Eysenck's theory of personality
  - What are the differences between Type A, Type B, Type C and Type D personalities
4. Taking any personality of a famous Indian leader like APJ Abdul Kalam, Mahatama Gandhi, Sarojini Naidu, Indira Gandhi and many such leaders  
Critically analyse their personality and leadership style keeping the personality theories of chapter 2.

## **SUBJECT - LEGAL STUDIES**

Students, During the month of April and May we have discussed various provisions of constitution of India with regards to Judiciary and transfer of Property. You are directed to submit the monthly assignment on the following questions. **Last Date of Submission is 10th July 2022.**

**Q.1 Discuss the case of AK Gopalan Vs State of Madras 1950**

**Q2. Discuss the Case of Anuradha Bhasin v. Union of India (2020)**

**Q.3 Discuss the Case of ADM Jabalpur vs Shivakant Shukla**

**Q.4 Discuss the Case Keshavanand Bharti vs. State of kerala 1973.**

**Q.5 Discuss the Case of Justice K.S.Puttaswamy(Retd) vs Union Of India 2018**

Students are supposed to mention the following while doing case research:

- i. Name of the case
- ii. Name of the parties.
- iii. Citation.
- iv. Facts of the cases.
- v. Issues of the case.
- vi. Judgement:
  1. Obiter Dicta.
  2. Ratio decidendi.

## **SUBJECT - HOME SCIENCE**

1. Preparation and use of any one teaching aid to communicate socially relevant messages for children/ adolescents/adults in the community

**OR**

Preparation of any one toy for children (age appropriate) using locally available and indigenous material.

2. Develop a **leaflet** for Consumer Education and Protection on any one of the following. Compile it according to the prescribed format

A.

- a. Consumer Protection Act (introduction)
- b. Consumer rights
- c. Consumer Responsibilities

B.

- a. Consumer Protection Act (introduction)
- b. Consumer Problems

### 3. Project

Any one of the following project:

- a. Visit to the neighbouring areas and interview two adolescents and two adults regarding their perception of persons with special needs.
  - (Cover page, Aim, Introduction to disability, types of disabilities, Rights of students with disability, Details of interviewee, Questionnaire, Observation, Bibliography)
- OR
- b. Profile any two person (child/adult) with special needs to find out their diet, clothing, activities, physical and psychological needs.
  - (Cover page, Aim, Introduction to disability, types of disabilities, Rights of students with disability, Details of interviewee , Questionnaire, Observation, Bibliography)
- OR
- c. Market survey any five processed foods with their packaging and label information. (Make a table comparing the types of packaging materials used for different types of foods.)

Sample table-

| Name of Product | Packaging Materials Used | Label Information |                  |        |                                           |                       |                 |
|-----------------|--------------------------|-------------------|------------------|--------|-------------------------------------------|-----------------------|-----------------|
|                 |                          | Date of packaging | Best before date | Weight | Certification mark (e.g. Agmark/ FPO/ISI) | Nutrition Information | Remarks, if any |
|                 |                          |                   |                  |        |                                           |                       |                 |

From the collected information point out the relative merits and demerits of the different packaging materials used.

- **Assessment Criterion- Content, Presentation,,**
- ***Marks will be awarded in Annual Examination during practical Examination.***

## **SUBJECT – PAINTING**

### **PRACTICAL**

Students need to prepare 4 paintings on A2 size paper based on the below mentioned topic :

1. Illusion Art,

2. Pichwai painting folk art of Rajasthan,
3. Kalamkari folk art of Andhra Pradesh and
4. Mandala art.

**The purpose of introducing practical exercises in painting is to help and enable the Students with Growth Values and Attitudes Rubric. The learner develops the ability to:**

- Respect, appreciate and demonstrate an open mind towards the artistic expression of others.
- Appears enthusiastic and willing to study artistic expressions from other cultures or regions of the world that are very different from own.
- Accept different forms and styles and tries to explore their meaning.
- Be sensitive towards other's creations.
- Be ready to research and transfer his/her learning to his / her own art
- Be responsible for his/her own learning and progress

## **SUBJECT – PHYSICAL EDUCATION**

Prepare a detailed research paper, PPT and Spiral bound file from the topic of your choice.

### List of projects/ Games-

Basketball, Football, Kabaddi,  
Kho-Kho, Volleyball,  
Handball, Hockey, Cricket,  
Bocce and Unified Basketball

Complete the Investigatory project on the choice of your game and Compile it according to the prescribed format.

- Cover page
- Certificate
- Acknowledgment
- Index
- Introduction
- Content (including pictures/graphs/tables/survey report etc.)
- Case Study
- Bibliography
- Assessment Criterion-

Content, Presentation, Research Work, Case study, Viva-voce and Confidence.

- It is an individual activity and marks will be awarded in Half Yearly Examination during practical Examination.

## SUBJECT- ARTIFICIAL INTELLIGENCE

|    |                                                                                                                                                                       |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Which of these visuals is most commonly used to show the relationship between two continuous variables?<br>1 Histogram<br>2 Scatter plot<br>3 Line Bar<br>4 Bar Chart |
| 2  | What are the techniques of Ideation?                                                                                                                                  |
| 3  | Explain Brain dumping?                                                                                                                                                |
| 4  | What are the steps of storytelling with data?                                                                                                                         |
| 5  | What are the types of Correlation?                                                                                                                                    |
| 6  | Difference between covariance and Correlation?                                                                                                                        |
| 7  | What is symmetry?                                                                                                                                                     |
| 8  | What is skewness?                                                                                                                                                     |
| 9  | What is positively distributed data?                                                                                                                                  |
| 10 | Draw the graph of negatively distributed data?                                                                                                                        |
| 11 | Which is the best level of measurement?                                                                                                                               |
| 12 | Which is the lowest level of measurement?                                                                                                                             |
| 13 | Difference between qualitative and quantitative data?                                                                                                                 |
| 14 | Explain Ratio scale with examples?                                                                                                                                    |
| 15 | Give two examples of Positive correlation?                                                                                                                            |
| 16 | Give two examples of No correlation?                                                                                                                                  |
| 17 | What is strength of association in Correlation?                                                                                                                       |

