

CAMBRIAN PUBLIC SCHOOL, KANKE ROAD, RANCHI

SESSION 2024-25

CLASS-XII(All Streams)

SUBJECT-ENGLISH

1. You are Secretary of the History Club of Vidya Mandir School. Draft a notice in not more than 50 words informing students of a proposed visit to some important historical sites in your city.
2. "What a thunder clap these words were to me!" Which were the words that shocked and surprised little Franz?
3. What does the third level refer to? What is the significance of the third level?
4. Why was the poet's realization painful in the poem "My Mother at Sixty-six"?

ASSIGNMENT OF MATHEMATICS (CLASS:-12th)

(A) Matrices and Determinants

1. Find a matrix X such that $3A - 2B + X = O$, where $A = \begin{bmatrix} 4 & 2 \\ 1 & 3 \end{bmatrix}$, $B = \begin{bmatrix} -2 & 1 \\ 3 & 2 \end{bmatrix}$

2. If $A = \begin{bmatrix} -1 & 2 \\ 3 & 1 \end{bmatrix}$, find $f(A)$, where $f(x) = x^2 - 2x + 3$.

3. If A and B are symmetric matrices of the same order, prove that $AB + BA$ is symmetric.

4. Let $\begin{vmatrix} 3 & y \\ x & 1 \end{vmatrix} = \begin{vmatrix} 3 & 2 \\ 4 & 1 \end{vmatrix}$. Find the possible values of x and y if x,y are natural number.

5. If the points (a,0),(0,b) and (1,1) are collinear, prove that $a+b = ab$.

6. Find the matrix X for which $\begin{bmatrix} 5 & 4 \\ 1 & 1 \end{bmatrix} X = \begin{bmatrix} 1 & -2 \\ 1 & 3 \end{bmatrix}$

7. If $A^2 - A + I = O$, then A^{-1} is equal to

8. The matrix $\begin{bmatrix} 2 & -1 & 3 \\ \alpha & 0 & 7 \\ -1 & 1 & 4 \end{bmatrix}$ is not invertible for $\alpha = \dots\dots\dots$

9. Use the product $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix} \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$ to solve the system of equations

$$x + 3z = -9, -x + 2y - 2z = 4, 2x - 3y + 4z = -3.$$

10. **Case – Study** On his birthday, Ishan decided to donate some money to children of an orphanage Home. If there were 8 children less, every one would have got 10 Rs more. However, if there were 16 Children more, every one would have got 10Rs less.

Let the number of children be x and amount distributed by Ishan to each child be y Rs.

Based on the above information, answer the following questions

- Write matrix equation represent the information given above.
- If A is the coefficient matrix of above situation, then what is $(\text{adj } A)$?
- Find the number of children and amount donated by Ishan.

(B) Inverse Trigonometric function

- Evaluate $\sec^{-1} \left\{ \sec\left(-\frac{7\pi}{3}\right) \right\}$
- find the domain of the function $f(x) = \sin^{-1} \sqrt{x-1}$
- If $\sin \{ \cot^{-1}(x+1) \} = \cos(\tan^{-1} x)$, then find x .
- solve a) $\tan^{-1} 4x + \tan^{-1} 6x = \frac{\pi}{4}$, b) $\sin^{-1} x + \sin^{-1}(1-x) = \cos^{-1} x$
- Write each of the following in the simplest form:

a) $\tan^{-1} \sqrt{\frac{a-x}{a+x}}$ b) $\tan^{-1} \left(\frac{x-a}{x+a} \right)$ c) $\cos^{-1} \left\{ \frac{2x-3\sqrt{1-x^2}}{\sqrt{13}} \right\}$ d) $\tan^{-1} \left(\frac{a+bx}{b-ax} \right)$

(C) Relations and Functions

- The number of relations on a finite set having 5 elements is
- Show that the number of equivalence relations on the set $\{1,2,3\}$ containing $(1,2)$ and $(2,1)$ is
- Show that the relation R on the set R of all real numbers, defined as $R = \{(a,b) : a \leq b^2\}$ is neither Reflexive nor symmetric nor transitive.
- Prove that the relation R on the set $N \times N$ defined by $(a,b) R (c,d) \iff a+d = b+c$ for all $(a,b), (c,d) \in N \times N$ is an equivalence relation. Also, find the equivalence classes $[(2,3)]$ and $[(1,3)]$.
- Show that the relation R on the set R of all real numbers, defined as $R = \{(a,b) : |a-b| \text{ is a Multiple of } 4\}$ is an equivalence relation.
- Let $f : R - \left\{ \frac{-4}{3} \right\} \rightarrow R$ be a function defined as $f(x) = \frac{4x}{3x+4}$. show that $f : R - \left\{ \frac{-4}{3} \right\} \rightarrow \text{Rang}(f)$ is one-one And onto. Hence, find f^{-1}

SUBJECT-PHYSICS

- Define electric flux. Write its SI unit, (ii) Using Gauss' law, prove that the electric field at a point due to a uniformly charged infinite plane sheet is independent of distance from it. How is the field directed if

- (a) the sheet is positively charged
(b) negatively charged?
- Find electric field due to dipole at an axial and equatorial point.
 - What is electric field line. Write down their properties and draw electric field line due to a) $q > 0$ b) $q < 0$ c) due to dipole
 - Find the torque on a dipole (p) placed in uniform electric field (E) at any angle.
 - Using Gauss law find electric field inside and outside due to thin uniformly charged spherical shell. Also draw the graph of E vs r

SUBJECT-CHEMISTRY(043)

UNIT 1-SOLUTIONS

1. Define the following : a) Isotonic solutions b) Abnormal molar mass c) Vant Hoff factor
d) Hypertonic solutions e) Hypotonic solutions

2. Derive the expression for Raoult's law for non volatile solute.

3. Explain Azeotropes with suitable example. Which type of azeotrope will form by mixing acetone with ethanol?

4. Explain why on addition of 1 mol of NaCl to 1 L of water, the boiling point of water increases, while addition of 1 mol of ethyl alcohol to 1 L of water decreases its boiling point.

5. a) The pH of 1 M monobasic solution is 2. Calculate the value for i .

B) Determine the Osmotic pressure of a solution prepared by dissolving 25 mg of K_2SO_4 in 2 L of water at $25^\circ C$, assuming that it is completely dissociated.

UNIT 2-ELECTROCHEMISTRY

1. Define the following : a) Molar conductivity b) Limiting Molar conductivity c) Kohlrausch law of independent migration of ions d) Secondary cell e) Corrosion

2. What is the effect of increase in concentration of zinc ions on the electrode potential of zinc electrode for which E° equal to $-0.76 V$?

3. The Resistance of a conductivity cell containing 0.001 M KCl solution is 1500 ohm. What is the cell constant if conductivity of 0.001 M KCl solution at 298 K is 0.00146 Scm^{-1}

4. a) Write Faraday's law of Electrolysis.

b) Calculate the amount of electricity in terms of C required to obtain

i) 2 g Ca from molten $CaCl_2$ ii) 5.4 g Al from molten $AlCl_3$ iii) 10.8 g Ag from molten $AgNO_3$

5. Write the reactions involved at cathode and anode during charging and discharging of Lead storage battery.

SUBJECT-BIOLOGY

1. Write the name male and female parts of flower.
2. Write the structure of stamen.
3. Describe the structure of pistil.
4. Draw diagram of t.s. of anther / microsporangium.
5. What are microspore mother cell or pollen mother cell?
6. What do you mean by microsporogenesis?
7. Describe the structure of pollen grain.
8. Exine and intine of pollen grains are made up of which substances?
9. What do you mean by multicarpellary pistil?
10. Differentiate between syncarpous and apocarpous.
11. What do you mean by MMC?
12. Describe megasporogenesis.
13. What do you mean by 8 nucleate and 7 celled stage of embryo sac?
14. Draw well labelled diagram of ovule. .
15. Write the meaning of xenogamy or allogamy.
16. Draw a well labeled diagram of mature embryo sac.
17. Write five types of pollination with examples.
18. Write need and significance of pollination.
19. Describe the pollen germination and fertilization.
20. Write the role of calcium boron inositol sugar complex during angiospermic fertilization.
21. What do you mean by syngamy and triple fusion?
22. Describe the types of endosperm development.
23. Draw the diagram of fertilized embryo sac.
24. Describe with diagram the stages of embryo development.
25. Draw diagrams of a typical dicot embryo and a monocot embryo.
26. What do you mean by albuminous seed and non albuminous seed?
27. Differentiate between dormancy and quiescence.
28. What do you mean by true fruit and false fruit?
29. Differentiate between parthenogenesis and parthenocarpy.
30. What is polyembryony? Give causes of polyembryony.

SUBJECT-HISTORY

ANSWER THE FOLLOWING QUESTIONS

- 1) Describe the contribution of various archaeologists from 1875 till 1950 in discovering the Harappan civilization.
- 2) Explain the main features of Mauryan administration and explain the principles of Ashoka's Dhamma.
- 3) Explain the land holding and trade arrangements of sixth century BC to sixth century AD.
- 4) "The Mahabharata is a story of kinship, marriages and Patriliney ". Examine the statement.
- 5) Study the articles on Mahabharata written by some Indian scholars. Discuss their views.

SUBJECT-GEOGRAPHY

Q1. Explain with examples how nature get humanised.

Q2. Describe the nature and scope of Human Geography.

Q3. How much density of population is found in densely populated areas, moderately populated areas and sparsely populated areas? Give two examples of each type.

Q4. Explain with examples the three economic factors influencing the population distribution in the world.

Q5. Define the term 'density of population'. Explain four geographical factors affecting the distribution of population in the world, with examples.

Complete your practical file.

SUBJECT-POLITICAL SCIENCE

I. Prepare a project on any of the following topics.

i) NAM- 1961 to present time.

ii) Division of Germany with special focus on construction and dismantling of the Berlin Wall.

iii) CIS- Central Asian Republics

iv) Arab Spring

v) Disintegration of USSR with special focus on Gorbachev

vi) Focus on any one of the following (current updates should be highlighted)::

a) Relationship between India and Russia

b) Relationship between India and China

c) Relationship between India and Pakistan

d) Relationship between India and Bangladesh

vii) ASEAN

viii) BRICS

ix) SAARC

x) European Union and BREXIT

xii) India's Nuclear Policy

United Nations with focus in India's candidature in Security Council

xiii) UN Agencies - UNICEF, UNESCO, WHO

xiv) Partition of India- Theory behind it and it's Legacy

xv) Comparison between NITI AAYOG and Planning Commission and their contribution in India's Development

xvi) Election -2024

xvii) Emergency - A blot on Indian Democracy.

Or any other topic related to Political Sc. 12 Standard.

II. Do Map and Cartoon work from chapter 1 & 2 from both Books.

SUBJECT-ECONOMICS

ASSIGNMENT 1

1. The some of the factor payments is equal to _____.

2. Read the following statements carefully and choose the correct alternative among those given below:

Statement 1: Depreciation may occur even when fixed assets are not in use.

Statement 2: Depreciation reserve fund fulfils the need for replacement investment.

Alternatives:

(a)Both statement 1 and statement 2 are true.

(b)Both statement 1 and statement 2 are false.

(c)Statement 1 is true but statement 2 is false.

(d) Statement 2 is true but statement 1 is false.

3. What are externalities? State its type with suitable example.

4. Giving reason, explain how the following should be treated in the estimation of National Income.

- (i) Payment of interest by a firm to a bank.
- (ii) Payment of interest by a bank to an individual.
- (iii) Payment of interest by an individual to a bank**

5.

(a) Calculate Sales	(b) Calculate Interest
NVAfc 300	Excise duty 1500
Intermediate consumption 240	Subsidy 700
Sales Tax 30	Profits 1100
Replacement cost 40	Consumption of fixed capital 700
Unsold stock (-)60	GDPmp 17500
	COE 9300
	Self employed income 3500
	Rent 800

SUBJECT-B.ST

1. Josh Enterprises decides to have a meeting of all the key employees of different departments in the organisation. The main motive is to tell the employees to keep the target of 20% increase in sales as the main objective when they work throughout the year. The meeting is full of ideas regarding the employees and processes involved. Various plans are made to harness the potential of the employees and streamline the processes. However, with the passage of a few days the external business environment checks the capability of the organisation to adapt to the situations. The company successfully comes out at the end of the year with flying colours. What are the various characteristics of management you can find highlighted here? Also identify the lines in which these characteristics have been highlighted.
2. XYZ Ltd. is a management-oriented company. Time and again all the employees learn from their seniors' various ways of dealing with diverse situations. They are provided training whenever required. They are also given incentives both financial as well as non-financial. The result is employees see their development in the organisation. The organisation tries to behave as a responsible constituent of society and always creates good quality products. It has a very good image in the market. The training modules are superb and the employees always try to find unique ways of providing solutions in the context of rapidly changing business environment. This has helped the organisation to adjust frequently in a very good manner. Which importance of management is highlighted here? Also identify the lines.
3. How does coordination integrate group efforts? State briefly.

4. Management is the trinity of art, Science and profession.” In the light of this statement explain the nature of Management.
5. “Co-ordination is the process of achieving unity of action among interdependent activity and department of an organization”. “Explain the nature of co-ordination in the light of this statement.
6. Floor manager of a mall is a very good manager as he utilizes all the functions of management to minimize cost of maintenance of his area. He directs all the staff members under him to follow the targets and advises them to put their efforts in the direction of achievement of these targets. Under his guidance the employees admit that they learn a lot and are able to meet their targets. This has led to the increase in their salaries. Identify the importance of management highlighted above.

SUBJECT:- ACCOUNTANCY

1. A, B & C were partners in a firm having capitals of Rs,60,000; Rs. 60,000; & Rs.80,000 respectively. Their Current Account balance: A: Rs. 10,000; Rs.5,000 &Rs. 2,000 (dr). According to the partnership deed, the partners were entitled to interest on capital @5 %p.a. C being the working partner was also entitled to a salary of Rs. 6,000p.a. The profits were to be divided as follows:
 - a) The first Rs.20,000 in proportion to their capitals
 - b) Next Rs. 30,000 in the ratio of 5:3:2.
 - c)Remaining profits to be shared equally.

The firm made a profit of Rs. 1,56,000 before charging any of the above items. Prepare the profit & Loss Appropriation A/c and pass necessary journal entry for Appropriation of profit.

2. On 31st March 2014 the balances in the Capital Accounts of Eleen, Monu & Ahmad after adjusting for profits & drawings were Rs.1,60,000; Rs. 1,20,000 & Rs 80,000 respectively, Subsequently, it was discovered that the interest on capital & drawings had been omitted.
 - a) The profit for the year ended 31st March, 2014 was Rs.40,000
 - b) During the year, Eleen ,Ahmed& Monu each withdrew a total sum of Rs.24,000
 - c) The interest on drawings was to be charged @ 5% p.a.
 - d) The Profit-sharing ratio among the partners was 2:1:1.
 Showing your working notes clearly, pass the necessary rectifying entry.

3. A business has earned average profits of Rs. 1,00,000 during the last few years & the normal rate of returns in similar business is 10%, Find out the value of goodwill by :
 - a) Capitalisation of super profits Method and
 - b) Super profit Method if the goodwill is valued at 3 years purchase of super profit.
 The assets of the business were Rs. 10,00,000 & its external liabilities Rs. 1,00,000.

4. Amay, Anmol & Rohan entered into partnership on 1st July, 2021 to share profits& Losses on the ratio of 3:2:1. Amay guaranteed that Rohan’s share of profit after charging interest on capital @6% p.a would not be less than Rs36,000p.a. Their fixed capital balances are : Rs.2,00,000,Rs.1,00,000&Rs.1,00,000 respectively. Profit for the year ended 31st March, 2022 was Rs. 1,38,000.

Prepare Profit /Loss Appropriation A/C.

5. Anita and Sunita distribute profit in the ratio of 3:2. On 1st April, 2019 their capitals were Rs 1,60,000 and Rs 1,20,000 respectively. Interest on capital is to be charged @6% per annum and Sunita has to be paid a yearly salary of Rs 36,000. Their drawings during the year were Rs 30,000 and Rs 40,000 respectively. The profit of the year after deducting Sunita's salary was Rs 43,800. Anita is also entitled to get 5% commission after charging such commission. Prepare profit and losses appropriation account and Partner's Capital Accounts.

विषय – हिंदी

- 1 अचानक जब आपकी मेट्रो रुक गई इस विषय को आधार बनाकर लेख लिखिए ।
- 2 कमरे में रखे टेलीविजन को देखकर बचपन की यादें ताजा हो जाती हैं आपके द्वारा बचपन में देखे गए प्रथम धारावाहिक का वर्णन करते हुए एक लेख तैयार करें ।
- 3- दहेज प्रथा एक सामाजिक समस्या है इस विषय को आधार बनाकर एक लेख लिखिए ।
- 4- आलोक धन्वा का संक्षिप्त परिचय देते हुए उनके द्वारा लिखे गए कविता पतंग का संक्षिप्त व्याख्या कीजिए ।

आरोह भाग 2

पाठ संख्या 1; 2 और 10 प्रत्येक से 10 प्रश्न बनाने हैं _

Legal Studies

I. Prepare a project on

'Understanding Case Laws '

Note:

(It has been discussed in class and Rubrics given in LS school group)

407517

ii. Text book questions of Unit :1 Judiciary.

COMPUTER SCIENCE [083]

HOLIDAY ASSIGNMENTS

Q1 Explain any Five Significant features of Python briefly?

Write a function

Q2 To develop calculator to perform add , subtract, product , division , and remainder by passing two numbers. Calculation must be done as per user choice.

Q3 To convert Binary Number 11011101_2 into decimal Number.

Q4 To print series like : Pass number of rows as argument

5 4 3 2 1

5 4 3 2

5 4 3

5 4

5

Q5 To search particular number from List passed to Function as argument and display if found or not.

