

I. Quote from Memory : 2x5=10

1. a) Write four lines of the poem "The Secret of the machines".

From: We were

To: gauged to fit.

b) From: Some water

To: twenty hours a day!

II. Read the following poetic lines and answer the following questions: 10x1=10

1. "We can pull and haul and push and lift and drive,
We can print and plough and weave and heat and light,
We can run and race and swim and fly and dive,
We can see and hear and count and read and write".

- a) What is meant by 'haul'?
- b) What is the rhyme scheme of the above given lines?
- c) Mention the figure of speech in the first line.
- d) Pick out the alliterated words from the third line.

2. "But remember, please, the law by which we live,
We are not built to comprehend a lie,
We can neither love nor pity nor forgive,
If you make a slip in handling us you die!"

- a) What do you understand by the word, 'slip'?
- b) What is the warning given in the above lines?
- c) What is the reminder given by the machine?
- d) Mention the figure of speech from 2nd and 3rd lines.
- e) What is mean by 'Comprehend'?
- f) What can a machine not do?

III. Paraphrase the following stanza: 1x5=5

1. "Though our smoke may hide the Heavens from your eyes,
It will vanish and the stars will shine again,
Because, for all our power and weight and size,
We are nothing more than children of your brain!

I. Answer the following: 1x8=8

1. Draw the graph of $y=x^2 + x - 2$ and hence solve $x^2 + x - 2 = 0$

II. Answer the following: 2x5=10

2. If $A = \begin{pmatrix} 1 & 8 & 3 \\ 3 & 5 & 0 \\ 8 & 7 & 6 \end{pmatrix}$, $B = \begin{pmatrix} 8 & -6 & -4 \\ 2 & 11 & -3 \\ 0 & 1 & 5 \end{pmatrix}$ and $C = \begin{pmatrix} 5 & 3 & 0 \\ -1 & -7 & 2 \\ 1 & 4 & 3 \end{pmatrix}$

find $3A+2B-C$

3. Find x and y if $x+y = \begin{pmatrix} 7 & 0 \\ 3 & 5 \end{pmatrix}$ and $x-y = \begin{pmatrix} 3 & 0 \\ 0 & 4 \end{pmatrix}$

III. Answer the following: 2x2=4

4. If a matrix has 16 elements. What are the possible orders it can have?

5. If $A = \begin{pmatrix} 1 & 3 & -2 \\ 5 & -4 & 6 \\ -3 & 2 & 9 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 8 \\ 3 & 4 \\ 9 & 6 \end{pmatrix}$ find $A + B$.

IV. Choose the correct answer: 3x1=3

6. If A is a 2x2 matrix and B is a 3x4 matrix, how many columns does AB have

- a) 3
- b) 4
- c) 2
- d) 5

7. The order of $\begin{pmatrix} 1+x & x^3 & \sin x \\ \cos x & 2 & \tan x \end{pmatrix}$ is

- a) 2 x 3
- b) 3 x 2
- c) 3 x 1
- d) 3 x 3

8. The number of columns in a column matrix are

- a) undefined
- b) 0
- c) 1
- d) any number of columns

I. Answer the following: 5x1=5

1. The sound waves with a frequency greater than 20KHZ are known as _____.
2. Photolysis is a decomposition reaction caused by _____.
3. The chemical formula for marble is _____.
4. Biogenesis was speculated by _____.
5. Life appeared 500 million years after the formation of _____.

II. Answer the following in one or two sentences: 5x2=10

Part - A (any one)

1. What is a longitudinal wave?
2. What is meant by particle velocity?

Part - B (any three)

1. What are combination reaction?
2. What are called thermolysis reactions?
3. Write the differences between combination and decomposition reactions.
4. Complete the following equation.
 $\text{Pb}(\text{NO}_3)_2 + \text{KI} \rightarrow ?$

Part - C (any one)

1. Write a note on special creation theory.
2. What is Atavism?

III. Answer the following in detail: 2x5=10

Part - A (any one)

1. a) What are the factors that affect the speed of sound in gases.
b) Explain laws of reflection with diagram

Part - B (any one)

2. a) Differentiate Homologous and Analogous organs.
b) Briefly add a note on evidences from paleontology.