

I. Answer the following: 1x8=8

1. Discuss the nature of solutions of the following quadratic equation:

$$x^2 + 2x + 5 = 0$$

II. Answer the following: 2x5=10

2. Solve for x, y, z if $\begin{pmatrix} x-3 & 3x-z \\ x+y+7 & x+y+z \end{pmatrix} = \begin{pmatrix} 1 & 0 \\ 1 & 6 \end{pmatrix}$

3. If $A = \begin{pmatrix} 1 & 1 \\ -1 & 3 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 2 \\ -4 & 2 \end{pmatrix}$ and $C = \begin{pmatrix} -7 & 6 \\ 3 & 2 \end{pmatrix}$ verify that $A(B+C) = AB+AC$

III. Answer the following: 2x2=4

4. If $A = \begin{pmatrix} 2 & 1 \\ 1 & 3 \end{pmatrix}$, $B = \begin{pmatrix} 2 & 0 \\ 1 & 3 \end{pmatrix}$ find AB and BA check if $AB=BA$.

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. AI = _____.

- a) A b) I c) O d) None of these

7. For the given matrix $A = \begin{pmatrix} 1 & 3 & 5 & 7 \\ 2 & 4 & 6 & 8 \\ 9 & 11 & 13 & 15 \end{pmatrix}$ the order of the

matrix of A^T is _____.

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

8. Find the matrix x if $2x + \begin{pmatrix} 1 & 3 \\ 5 & 7 \end{pmatrix} = \begin{pmatrix} 5 & 7 \\ 9 & 5 \end{pmatrix}$

- a) $\begin{pmatrix} -2 & -2 \\ 2 & -1 \end{pmatrix}$ b) $\begin{pmatrix} 2 & 2 \\ 2 & -1 \end{pmatrix}$ c) $\begin{pmatrix} 1 & 2 \\ 2 & 2 \end{pmatrix}$ d) $\begin{pmatrix} 2 & 1 \\ 2 & 2 \end{pmatrix}$

I. Fill in the blanks: 5x1=5

1. The minimum distance required to hear an echo is _____.

2. The equilibrium attained during the melting of ice is known as _____.

3. Darwin published his observations and conclusions under the name _____.

4. Discontinuous variation form the basis for _____ theory proposed by De Vries.

5. _____ is the science that looks for the presence of extra terrestrial life in the universe.

II. Answer the following: 5x3=15

Part - A (any one)

6. What is an echo?

7. What is Doppler effect?

Part - B (any one)

8. Define Rate of a reaction.

9. Define chemical equilibrium.

Part - C (any three)

10. List out the five principles of Darwinism.

11. Differentiate somatic and germinal variation.

12. List out the importance of fossils. (any two)

13. What are extremophiles?

14. What is petrification?

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

Part - A

15. a) Explain about reflection at the boundary of a denser medium with diagram.

(or)

b) How to measure velocity of sound by echo method and calculate the speed of sound using echo method?

Part - B

16. a) Explain the factors influencing the rate of a reaction

(or)

b) What are the characteristics of equilibrium?

16.10.19 EVERWIN MATRIC.HR.SEC.SCHOOL Time:45min.
Std: X (K-N) TT SOCIAL SCIENCE Marks: 25

I. Choose the correct answer: 3x1=3

1. Where were the sons of Tipu Sultan sent after the Vellore Revolt?
a) Calcutta b) Mumbai c) Delhi d) Mysore
2. When did the Vellore Revolt break out?
a) 24 May 1805 b) 10 July 1805
c) 10 July 1806 d) 10 September 1806
3. Who issued the Tiruchirappalli proclamation of Independence
a) Marudhu brothers b) Puli Thevar
c) Kattabomman d) Gopala Nayak

II. Fill in the blanks: 2x1=2

4. _____ was declared the new sultan by the rebels in Vellore fort.

5. Kattaboman was hanged to death at _____.

III. Match the following: 5x1=5

6. i) Col. Fancourt - Ramalinganar
ii) Subedar Sheik Adam - Dindugal
iii) Bannerman - Odanilai
iv) Gopala Nayak - Vellore Revolt
v) Theerthagiri - Vellore fort

IV. Answer the questions given under each caption: 1x4=4

7. Dheeran Chinnamalai

- a) When was Dheeran Chinnamalai born?
- b) How did he earn the title "Chinnamalai"?
- c) Name the Diwan of Tipu Sultan?
- d) Why and where was he hanged to death?

V. Answer the following questions: 3x2=6

8. What was the bone of contention between the company and Kattabomman?

9. Why was Heron dismissed from service?

10. Point out the importance of the Treaty of 1801.

V. Answer in detail: 1x5=5

11. Write an account for the outbreak of Vellore Revolt in 1806.