

I. Choose the correct answer: 3x1=3

- $4\sqrt{7} \times 2\sqrt{3} = \underline{\hspace{2cm}}$.
 a) $6\sqrt{10}$ b) $8\sqrt{21}$ c) $8\sqrt{10}$ d) $6\sqrt{21}$
- If $p(a)=0$ then $(x-a)$ is a _____ of $p(x)$.
 a) divisor b) quotient c) remainder d) factor
- Probability lies between _____.
 a) -1 and +1 b) 0 and 1 c) 0 and n d) 0 and ∞

II. Answer any three of the following: 3x2=6

- Simplify: $\sqrt{35} \div \sqrt{7}$
- What is the remainder when $x^{2018} + 2018$ is divided by $x-1$.
- Expand using identities $(5x + 4y)(5x - 4y)$
- Find the median for the following:
 36, 44, 86, 31, 37, 44, 86, 35, 60, 51
- What is the probability of drawing a king from a deck of cards?

III. Answer any two of the following: 2x3=6

- When two coins are tossed, what is the probability that the two heads are obtained?
- The median of observation 11, 12, 14, 18, $x + 2$, $x + 4$, 30, 32, 35, 41 are arranged in ascending order is 24. Find the values of x .
- Find the remainder when $p(x)$ is divided by $g(x)$
 $p(x) = x^3 - 2x^2 - 4x - 1$
 $g(x) = x + 1$

IV. Answer any two of the following: 2x5=10

- Simplify: $5\sqrt{3} + 18\sqrt{3} - 2\sqrt{3}$
- Determine the value of m , if $(x+3)$ is a factor of $x^3 - 3x^2 - mx + 24$
- The following are the marks scored by the students:

Class	0-10	10-20	20-30	30-40	40-50	50-60
Number of students	2	7	15	10	11	5

Calculate the median

- There are 24 balls in a pot. If 3 of them are Red, 5 of them are Blue and the remaining are Green, then what is the probability of picking out (i) a Blue ball ii) a Red ball iii) a Green ball?

I. Choose the correct answer: 6x½=3

- The Notable Chola King Credited with bringing forest land under the plough and developing irrigational facilities
 a) Karikalan b) Rajarajan I c) Kulothungan d) Rajendran I
- The name of the script used in the Sangam Age.
 a) English b) Devanagari c) Tamil Brahmi d) Granta
- _____ is seen in the lower course of the river.
 a) Rapids b) Alluvial fan c) Delta d) Gorges
- India has adapted the electoral system followed in the _____.
 a) USA b) United Kingdom c) Canada d) Russia
- The process of the leveling up of land by means of natural agents is called _____.
 a) aggradation b) degradation c) gradation d) none
- _____ is the state with highest installed solar capacity in India.

II. Fill in the blanks: 2x1=2

- The state having the highest literacy rate in India is _____.
- Narmada Bachao Andolan is a _____.

III. Match the following: 5x½=2½

- | | | |
|--------------------|---|-------------------|
| 9. National Party | - | Aeolian Process |
| 10. Arikamedu | - | Education |
| 11. Mushroom Rock | - | Seven |
| 12. Stalactites | - | A Sangam Age Port |
| 13. Human Resource | - | Karst Topography |

IV. Answer all the questions given under each caption:

(Select any one): 1x4=4

- 1) Hero Stones:
 - What was the common practice in a pastoral society?
 - Who plundered the credit wealth of enemies?
 - How were the dead warriors remembered?
 - Which Tamil text describes the procedures for erecting hero stones?
2. None Tamil Sources (Foreign Accounts)
 - What does the presence of non-Tamil sources reveal?
 - Name the classic work of the Mauryan period that makes a mention that the pearls and shells came from Pandya Country.

- c) What is a chronicle?
 d) Who speaks about the pepper trade between Roman empire and India?

V. Distinguish between any one of the following: $2 \times 1 = 2$

15. Physical and Chemical Weathering
 16. Deltas and Estuary.

VI. Answer any three of the following in brief: $3 \times 1 \frac{1}{2} = 4 \frac{1}{2}$

17. Define weathering:
 18. What is a wave cut platform?
 19. Agriculture was one of the main sources of subsistence in Sangam Age. Give reasons.

20. What is a pressure group?

21. Expand the following:

- 1) PPP 2) HDI

VII. Answer any one of the following in Detail: $1 \times 4 = 4$

22. To what extent do you think the political powers of Tamilagam influenced Sangam Age polity?
 23. Write a note on weathering. Classify and explain.

VIII. Mark the following places in outline map of world: $3 \times 1 = 3$

24. a) Pacific Ring of fire b) Rift Valley of Africa
 c) Alps Mountains d) Earthquake Zone
 e) Atlantic Ocean f) Mt. Helen
 g) Pacific Ocean

I. Choose the correct answer: $5 \times 1 = 5$

1. Chlorophyll in a leaf which is required for _____.
 a) photosynthesis b) tropic Movement
 c) transpiration d) nastic movement
2. _____ is positively hydrotropic as well as positively geotropic.
 a) shoot b) root c) flower d) fruit
3. The non-directional movement of a plant part in response to temperature is called _____.
 a) Thermotropism b) Chemotropism
 c) Thermonasty d) Thigmonasty
4. Transpiration takes place through _____.
 a) fruit b) seed c) flower d) stomata
5. _____ is a unidirectional movement of a whole or part of a plant towards the direction of stimuli.
 a) Tropism b) Nasty c) Photosynthesis d) Transpiration

Part - B

II. Answer any five of the following questions: $5 \times 2 = 10$

6. What is nastic movement?

7. Match the following:

Column - A

Column-B

- | | | |
|--|---|--------------------------|
| a) Shoots growing towards the light | - | a) Positive Geotropism |
| b) Roots growing downwards | - | b) Positive Phototropism |
| c) Shoots growing upward | - | c) Negative Phototropism |
| d) Roots growing downwards away from light | - | d) Negative Geotropism |

8. Say true or false:

- a) Photosynthesis produces glucose and carbondioxide.
 b) The response of a part of plant to the chemical (substance) stimulus is called chemotropism.

9. Differentiate stomatal and lenticular transpiration.

10. What is chlorophyll?

11. Define transpiration.
 12. Draw and label the parts of stomata

Part - C

III. Answer any two in detail: 2x5=10

13. Differentiate between tropic and nastic movements.
 14. How will you prove that starch is present in the leaves?
 15. There are 3 plants A, B and C. The flowers of A open their petals in bright light during the day but closes when it gets dark at night. On the other hand, the flowers of plant B open their petals at night but closes during the day when there is bright light. The leaves of plant C fold up and droop when touched with fingers or any other solid object.
 a) Name the phenomenon shown by the flowers of plant A and B.
 b) Name one plant each which behaves like the flowers of plant A and B.
 c) Name the phenomenon exhibited by the leaves of plant C.

I. Choose the correct answer: 3x1=3

1. Conjugate surd of $3+\sqrt{2}$ is _____.
 a) $3 - \sqrt{2}$ b) $-3 + \sqrt{2}$ c) $\sqrt{2} - 3$ d) $\sqrt{2} + 3$
 2. $P(E) + P(E^1) =$ _____.
 a) -1 b) 0 c) 1 d) 2
 3. If $P(E) = 1$, then E is called ____ event.
 a) impossible b) certain c) exclusive d) complementary

II. Answer any three of the following: 3x2=6

4. If a probability of a player winning a particular tennis match is 0.72. What is the probability of the player loosing the match.
 5. Rationalise the denominator: $\frac{1}{\sqrt{50}}$
 6. Factorise: $ab-ac-mb+mc$
 7. Factorise: $2a^2+9a+10$
 8. Find the mode of the given data:
 3.1, 3.2, 3.3, 2.1, 1.3, 3.3, 3.1

III. Answer any two of the following questions: 2x3=6

9. Rationalise the denominator: $\frac{5}{3\sqrt{5}}$
 10. Factorise: $a^2+\frac{1}{a^2} - 18$
 11. Factorise: $(a+b)^2+9(a+b)+18$
 12. A company manufactures 10000 Laptops in 6 months out of which 25 of them are found to be defective. When you choose one Laptop from the manufactured, what is the probability that selected Laptop is a good one.
 IV. Answer any two of the following questions: 2x5=10
 13. If $x = \sqrt{5} + 2$, then find the value of $x^2 + \frac{1}{x^2}$
 14. Find the mode of the following data:

Marks	0-10	10-20	20-30	30-40	40-50
Number of Students	22	38	46	34	20

15. Factorise: $8x^3+125y^3$
 16. Factorise: a^4-3a^2+2