SCIENCE AND TECHNOLOGY (Theory)
CLASS X

Time: 2:45 Hours
Max. Marks: 75

*You will **NOT** be allowed to write during the first 10 minutes.*
This time is to be spent in reading the question paper
The time given at the head of this paper is the time allowed for writing answers

- Please check that this question paper contains 3 printed pages.
- Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains 30 questions
- Please write down the serial number of the question before attempting it.

(I) The question paper comprises of two sections. A & B . you are to c both the sections.
(II) The candidates are advise to attempt all the questions of Section A separately & Section B separately.
(III) All question are compulsory.
(IV) There is no overall choice. However, internal choice has been provided in some question. You are to attempt only one option in such question
(V) Marks allocated to every question indicated against it.
(VI) Question number 1-5 in section A & 21- 23 in section B are very short answer questions. These are to be answered in one word or one sentence.
(VII) Question number 6-10 in section A & 24- 25 in section B are very short answer questions. These are to be answered in 30-40 word each.
(VIII) Question number 11-17 in section A & 26- 29 in section B are very short answer questions. These are to be answered in Question number 1-5 in section A & 21- 23 in section B are very short answer questions. These are to be answered in one word or one sentence.

(IX) Question number 18-20 in section A & 30 in section B are very short answer questions. These are to be answered in 70 words each.

SECTION – A

1. What do you mean by Instantaneous rate of reaction a reaction?
1
2. Write IUPC of the fooing:
1
(i) C_2H_5COOH (ii) $C_2H_5COCH_3$
3. Name the main constituent of natural gas
1
4. What is critical angle ?
1

5. What will be the current drawn by an electric bulb of 40W when it is connected to a source of 200 V.

1

6. What is efflorescence? What happens when washing soda is heated in air?

2

7. Complete the following reactions:

(i) $C_2H_5COOH + C_2H_5CH \xrightarrow{\text{conc. } H_2SO_4}$

(ii) $C_2{=}CH\text{-}CH{=}\ CH_2 \xrightarrow{\text{Polymerize}}$

OR

What happens when

(i) Ethanel reacts with sodium

(ii) Aldehyde is treated with tollen's reagent.

2

8. What is presbyopia? How will you correct it?

2

9. What do you mean by electroplating? State one purpose for which electroplating is done. **2**

10. What are the differences between bar magnet & electromagnet?

2

11. 0.0 mole of HCl is added to prepare 2,0L of solution. Calculate the PH of this HCl solution. **3**

OR

What is common ION effect? What is effect of adding an acid & alkali to water?

12. How is cement manufactured? What is the purpose of adding gypsum to cement?

3

13. What do you mean by liquation method & oxidative refining method ?

3

14. Draw with a neat labeled diagram the construction & working of biofas plant.

3

15. What do you mean by geothermal energy? State the advantage & disadvantages of geothermal energy.

OR

How do we locate the position of the pole star in the sky? Why is the pole star so special?

3

16. Explain how Uranium nucleus behaves like a drop of liquid.

3

17. How are protostars formed? What do you mean by supernerve explosion

3

18. Derive the mirror formula of a concave mirror

5

OR

With a neat diagram explain how a astronomical telescope works. Express the magnefication produced by telescope.

19. a. How is sulphur extracted by French process?

b. Why is sulphuric acid called the king of chemicals?

5

OR

How is Iron extracted from hematite ore? What is the function of adding limestone in the extraction of iron?

20. A bulb is rated at 200V-100W. What is its resistance? Five such bulbs burn for 5 hours. What is the electrical energy consumed? Calculate the cost if the rate is Rs. 2.50 per unit. **5**

SECTION –B

21. Give the full form of IUCDs with one example.

1

22. Name the vascular bundle, which transport plant hormones. Name the only H_2O conducting element in non-flowering plant.

1

23. Who proposed biogenetic law? What does it state?

1

24. Write the 4 modes of solid disposal.

2

25. What do you mean by Assimilation?

2

26. a. How brain is protected?

2

b. Which lobe of cerebrum is responsible for :

(i) Visual reception

(ii) Smell & conscious association

3

27. Why metaphase stages of cells division is considered best stage to study chromosome? Explain with example(s) that 'Karyotype' can be useful for the study of disorders in human.

3

28. Write the major green house gas other than CO_2. How do these gases effect the environment? **3**

29. What is excretion? Describe the process in Earthworms.

3

30. Describe the primary & accessory organs associated with the production and transportation of human male gametes.

5