

SCIENCE AND TECHNOLOGY
CLASS - X (THEORY)

TIME: $2\frac{1}{2}$ Hrs.

MAX. MARKS: 60

GENERAL INSTRUCTIONS:

1. *The question paper consists of two Sections A and B. You are to attempt both the sections.*
2. *The candidates are advised to attempt all the questions of section-A separately and Section –B separately.*
3. *All questions are compulsory.*
4. *There is no overall choice. However, internal choice has been provided in two questions of five marks category and one question of 3 marks category in Section A and one question of 2 marks category and one question of three marks category in Section-B.*
5. *Marks allocated to each question are indicated against it.*
6. *Questions 1 to 4 in Section A and 17, 18 in Section-B are very short answer questions. These are to be answered in one word or one sentence. One mark questions*
7. *Questions 5 to 8 in Section A and 19, 20 in Section-B are short answer questions. These are to be answered in 30-40 words each. Two mark questions*
8. *Questions 9 to 14 in Section A and 21 to 23 in Section-B are also short answer questions. These are to be answered in 40-50 words each. Three mark questions*
9. *Questions 15, 16 in Section A and 24 in Section-B are Long answer questions. These are to be answered in about 70 words each. Five mark questions*

SECTION- A

1. How much energy we get if we convert the whole of iron nucleus into the energy?
2. How the resistance in the rheostat varies?
3. What are the reason of causing of presbyopia and astigmatism in the human eye?
4. Why do blue and yellow pigments give green color on mixing? Explain as clearly as possible and support your answer with a diagram.
5. a) What are the factors on which the strength of magnetic field produced by a current carrying solenoid depends?
b) What are Van Allen radiation belts? How are these discovered?
6. What are semi-conductors? Explain the principle of working of a solar cell made of semiconductor. Why are solar cell panels used in artificial satellite?
7. a) What is solar constant?

b) Two identical resistors each of resistance 20 ohm are connected

- 1) In series 2) in parallel,

In line to a battery of 24volts. Calculate the ratio of power consumed in the Combination of resistors in the two cases.

8. WE generally heard in the news that some country is launching satellites and recently USA sends its astronauts to moon. We say that these astronauts go to moon on rocket, and today we use multistage launching. How it is possible that people reach to moon on rockets because after one stage the rocket fell in to sea. Then how astronauts reach to the moon? Are we really used the rocket term in right form? Or we are actually want to say something about this and not able to say? Clearly explain the term ROCKET. Also explain its fuel properties and two fuels.

SECTION- B

9. What is the role of tartaric acid in the baking powder?

10. What is cisplatin? What is its use?

11. Give chemical reactions of following with the water:-

- a) aluminum
b) potassium

12. When a reversible chemical reaction does reaches a state of equilibrium? Write expression for the equilibrium constant (K) for the equilibrium

reaction: $H_2(g) + I_2(g) \leftrightarrow 2HI(g)$ How will the numerical value of equilibrium constant change if the equation is written: $2HI \leftrightarrow H_2(g) + I_2(g)$.

13. a) How is pure ethanol prepared?

b) What is formalin?

c) Give reaction to show that ethanoic acid is acidic in nature?

14. a) What is oleum? What is its use?
b) How chlorine reacts with phosphorous?
c) Give two examples of neutral oxides?
15. a) Why there is difference in shapes of two allotropes of sulphur.
b) How sulphur reacts with carbon?
c) How is colored glass prepared?
d) Differentiate between malleability and ductility?
e) By which method lead is extracted from its ore?

SECTION- C

16. What is sympathetic and parasympathetic system of heart?
17. What is cranium? What its basic function.
18. What are the basic common features of any respiratory organ whether in lungs, gills or skin?
19. what are harmful effects of following pollutants:-
a. lead
b. asbestos
20. Explain with diagram the excretory system of humans?
21. State with two examples how the sex determination is controlled by the environmental conditions?
22. name the hormone and the endocrine gland whose functions are as follows
c. Maintenance of pregnancy.
d. Development of bones.
e. Increase blood glucose levels.
f. Responsible for beard and moustache.
g. Help in lactation.
h. Mineral balance in the body.
23. a) Why we use copper in the T generally known as Cu T? Why cannot we use other metal?
b) What is tesctomy and vasectomy?

- C) What are contravites? Name two generally used contravites?
- d) How oral pills works?