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. Which property of duralium makes it enable to be used in airplanes?
2. What happen when the concentrated sulphuric acid is added to sugar?
3. What is the minimum velocity of wind which is needed to harness its energy?
4. Name two radioactive elements?
5. What is dynamic equilibrium? What are its characteristics?
6. What is geostationary satellite? Write its two applications?
7. What are magnetic lines of forces? What does it indicate?
8. Show graphically the effect of temperature on the rate of reaction for-
    a. most of chemical reactions
    b. explosive reactions
    c. enzyme catalyzed reactions

9. Write the formulae for the given compounds and name the functional groups present in each of them :

(i) propanoic acid ii) butanone (iii) Nitromethane

10. How is mercury extracted from its ore?
11. What is composition of sunlight? Describe briefly its components?
12. Define resistivity and its unit? Why we use alloys for heating elements?
13. Draw a diagram of nuclear reactor?
14. What is pH value? What does it indicate? pH value of a given solution changes from 8 to 6. How many times will you expect a change in hydrogen ion concentration?
15. a) What is magnification? Two thin lenses of power +4.5 D and – 2.5 D are placed in contact. Find the power and focal length of lens combination? (BY:- VIDHUR, LUDHAIANA, 09915089502)

b) an object of 4.0 cm in size is placed 30 cm in front of concave mirror of focal length

20 cm. find the position and nature of image formed.

16. (a) How is Pyrex glass prepared?

(b) What is the unique property in photo chromatic glass?

(c) What is the major disadvantage of using the soda glass?

(d) How colored glasses prepared?

(e) Which type of glass is used in the glassware? What is its unique property which

enable it to be used in glassware?

SECTION- B

17. What is the importance of discovery of fossil of ARCAEOPTERYX in term of evolution?
18. Name two hermaphrodite animals?
19. Define sexual transmitted diseases? Give two examples?
20. Define karotyping? How many groups are found in human karyotype?

21. With the help of diagram explain briefly the excretion system of earthworm?
22. With the help of diagram explain the structure of neuron?
23. What is eutrophication? Mention its harmful effects?
24. What is photosynthesis? What are its two phases? Discuss role of chlorophyll in it?