



## Standard 10

## SCIENCE

Marks: 75

Time: 3.00 Hrs.

## Part - I

 $12 \times 1 = 12$ 

1. Answer all the questions.

2. Choose the correct answer.

- 1) Magnification of a convex lens is
  - a) positive
  - b) negative
  - c) either positive or negative
  - d) zero
- 2) Velocity of sound in the atmosphere of a planet is  $500 \text{ ms}^{-1}$ . The minimum distance between the sources of sound and the obstacle to hear the echo, should be
  - a) 17m
  - b) 20m
  - c) 25 m
  - d) 50m
- 3) In which of the following reaction, the mass number decreases by four of the daughter nucleus?
  - a)  $\alpha$  decay
  - b)  $\beta$  decay
  - c)  $\gamma$  decay
  - d) neutron decay
- 4) \_\_\_\_\_ group contains the member of halogen family.
  - a) 17<sup>th</sup>
  - b) 15<sup>th</sup>
  - c) 18<sup>th</sup>
  - d) 16<sup>th</sup>
- 5) The chemical formula for marble is
  - a)  $\text{Ca}(\text{OH})_2$
  - b)  $\text{CaCO}_3$
  - c)  $\text{CaCl}_2$
  - d)  $\text{Ca}_3(\text{PO}_4)_2$
- 6) Which is formed during anaerobic respiration?
  - a) Carbohydrate
  - b) Ethyl alcohol
  - c) Acetyl CoA
  - d) Pyruvate
- 7) Which one is referred as "Master gland"?
  - a) Pineal gland
  - b) Pituitary gland
  - c) Thyroid gland
  - d) Adrenal gland
- 8) The heart of amphibians possess \_\_\_\_\_ chambers.
  - a) 5
  - b) 2
  - c) 4
  - d) 3
- 9) The large elongated cells that provide nutrition to developing sperms are
  - a) Primary germ cells
  - b) Sertoli cells
  - c) Leydig cells
  - d) Spermatogonia
- 10) We can cut the DNA with the help of
  - a) Scissors
  - b) Restriction endonucleases
  - c) Knife
  - d) RNAase
- 11) TFM in soaps represents \_\_\_\_\_ content in soap.
  - a) mineral
  - b) vitamin
  - c) fatty acid
  - d) carbohydrate
- 12) Cancer of the epithelial cells is called
  - a) Leukemia
  - b) Sarcoma
  - c) Carcinoma
  - d) Lipoma

## Part - II

Answer any seven questions: [Question No. 22 is compulsory]

 $7 \times 2 = 14$ 

- 13) State Newton's second law.
- 14) Name three animals which can hear ultrasonic vibrations.
- 15) Define one roentgen.
- 16) Why does the reaction rate of a reaction increase on raising the temperature?
- 17) Draw and label the structure of oxysomes.
- 18) Why are thyroid hormones referred as personality hormone?

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- 19) Write any 2 uses of Ethanol.
- 20) Define genetic engineering.
- 21) What are the contributing factors of obesity?
- 22) An electric heater of resistance  $5\Omega$  is connected to an electric source. If a current of 6A flows through the heater, then find the amount of heat produced in 5 minutes.

**Part - III****Answer any seven questions: [Question No. 32 compulsory]** **$7 \times 4 = 28$** 

- 23) What are the types of inertia? Give an example for each type.
- 24) Differentiate the eye defects: Myopia and Hypermetropia
- 25) What is an echo?
  - a) State two conditions necessary for hearing an echo.
  - b) What are the medical applications of echo?
  - c) How can you calculate the speed of sound using echo.
- 26) In what way hygroscopic substances differ from deliquescent substances.
- 27) a) What is respiratory quotient?  
b) Write the dental formula of rabbit.
- 28) With a neat diagram explain the structure of a neuron.
- 29) With a neat labelled diagram describe the parts of a typical angiospermic ovule.
- 30) How do you differentiate homologous organs from analogous organs?
- 31) How does rain water harvesting structures recharge ground water?
- 32) a) Calculate the gram molecular mass of  $H_2O$ .  
b) The hydroxyl ion concentration of a solution is  $1 \times 10^{-9} M$ . What is the pOH of the solution?

**Part - IV****Answer all the questions. Draw diagrams wherever necessary:** **$3 \times 7 = 21$** 

- 33) a) Define one calorie.  
b) An alloy of nickel and chromium is used as the heating element. Why?  
c) List the merits of LED bulb.

**(OR)**

- a) What is a nuclear reactor? Explain its essential parts with their functions.
- b) Give any two uses of radio isotopes in the field of agriculture.
- c) Who discovered natural radioactivity?

- 34) a) Give the salient features of "Modern atomic theory".  
b) Define: Atomicity  
c) State two conditions necessary for rusting of iron.

**(OR)**

- a) Differentiate soaps and detergents.  
b) How is ethanoic acid prepared from ethanol? Give the chemical equation.

- 35) a) Enumerate the functions of blood.  
b) Write the physiological effects of gibberellins.

**(OR)**

- a) What are allosomes?  
b) Define Ethnobotany and write its importance.  
c) Enumerate the importance of forest.