

## Standard 10

## SCIENCE

## Part-I

Time Allowed: 3.00 Hours

Maximum Marks: 75

Choose the correct answer:

12×1=12

- 1) If a substance is heated or cooled, the linear expansion occurs along the axis of
  - a) X or -X
  - b) Y or -Y
  - c) both (a) and (b)
  - d) (a) or (b)
- 2) The frequency which is audible to the human ear is
  - a) 50 kHz
  - b) 20 kHz
  - c) 15000 kHz
  - d) 10000 kHz
- 3) Unit of radioactivity is \_\_\_\_\_.
  - a) roentgen
  - b) curie
  - c) becquerel
  - d) all the above
- 4) A 25% alcohol solution means
  - a) 25 ml alcohol in 100 ml of water
  - b) 25 ml alcohol in 25 ml of water
  - c) 25 ml alcohol in 75 ml of water
  - d) 75 ml alcohol in 25 ml of water
- 5) Photolysis is a decomposition reaction caused by \_\_\_\_\_.
  - a) heat
  - b) electricity
  - c) light
  - d) mechanical energy
- 6) The secondary suffix used in IUPAC nomenclature of an aldehyde is \_\_\_\_\_.
  - a) -ol
  - b) -oic acid
  - c) -al
  - d) -one
- 7) The wall of human heart is made of
  - a) Endocardium
  - b) Epicardium
  - c) Myocardium
  - d) All of the above
- 8) Estrogen is secreted by
  - a) Anterior pituitary
  - b) Primary follicle
  - c) Graffian follicle
  - d) Corpus luteum
- 9) The Centromere is found at the centre of the \_\_\_\_\_ chromosome.
  - a) Telo centric
  - b) Meta centric
  - c) Sub-meta centric
  - d) Acro centric
- 10) The 'use and disuse theory' was proposed by \_\_\_\_\_.
  - a) Charles Darwin
  - b) Ernst Haeckel
  - c) Jean Baptiste Lamarck
  - d) Gregor Mendel
- 11) Pusa Komal is a disease resistant variety of \_\_\_\_\_.
  - a) Sugarcane
  - b) Rice
  - c) Cowpea
  - d) Maize
- 12) Which is used to build scripts?
  - a) Script area
  - b) Block Palette
  - c) Stage
  - d) Sprite

## Part-II

Answer any seven. Q.No.22 is compulsory:

7×2=14

- 13) State Newton's Second Law.
- 14) Mention two cases in which there is no Doppler effect in sound.
- 15) Define electric Potential and Potential difference.
- 16) True or False. If false, correct it.
  - a) Noble gases are diatomic.
  - b) The gram atomic mass of an element has no unit.
- 17) Give an example each :
  - (a) gas in liquid
  - (b) solid in liquid
  - (c) solid in solid
  - (d) gas in gas.



18) Differentiate reversible and irreversible reactions.

19) Draw and label the structure of oxysomes.

20) **Match the following:**

- |                      |   |                                     |
|----------------------|---|-------------------------------------|
| 1. Autosomes         | - | Trisomy 21                          |
| 2. Diploid Condition | - | 9:3:3:1                             |
| 3. Allosome          | - | 22 pair of Chromosome               |
| 4. Down's syndrome   | - | 2n                                  |
| 5. Dihybrid ratio    | - | 23 <sup>rd</sup> Pair of Chromosome |

21) What is bolting? How can it be induced artificially?

22) Calculate the current and resistance of a 100 W, 200 V electric bulb in an electric circuit.

### Part-III

**Answer any seven. Q.No.32 is compulsory:**

**7×4=28**

23) Differentiate the eye defects : Myopia and Hypermetropia.

24) What are the factors that affect the speed of sound in gases?

25) i) Define Critical mass.

ii) Describe rocket propulsion.

26) Derive the relationship between relative molecular mass and vapour density.

27) Arrive at systematically, the IUPAC name of the compound  $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-OH}$ .

28) i) Differentiate between systole and diastole. Explain the conduction of heartbeat.

ii) Enumerate the functions of blood.

29) With a neat labelled diagram describe the parts of a typical angiospermic ovule.

30) i) Why is a Arachaeopteryx considered to be a connecting link?

ii) Define Ethnobotany and write its importance.

31) Suggest measures to overcome the problems of an alcoholic.

32) i) The hydroxyl ion concentration of a solution is  $1 \times 10^{-9}$  M. What is the pOH of the solution?

ii) Relationship between pH and pOH.

### Part-IV

**Answer all the questions:**

**3×7=21**

33) a) What do you understand by the term "ultrasonic vibration"?

b) State three uses of ultrasonic vibrations.

c) Name three animals, which can hear Ultrasonic Vibrations.

**(OR)**

a) What is stellar energy?

b) Compare the properties of alpha, beta, gamma radiations.

34) i) Explain the factors influencing the rate of a reaction.

ii) What happens when  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  is heated? Write the appropriate equation.

**(OR)**

a) Define reflex arc.

b) Explain the male reproductive system of rabbit with a labelled diagram.

35) a) Define reflex arc.

b) With a neat labelled diagram explain the structure of a Neuron.

**(OR)**

Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross?