

Standard 10

SCIENCE

Marks: 75

Time: 3.00 Hrs.

12×1=12

I. Choose the correct answer:

- 1) In which of the following sport the turning of effect of force used
a) Swimming b) Tennis c) Cycling d) Hockey
- 2) Power of a lens is $-4D$ then its focal length is
a) 4m b) $-40m$ c) $-0.25m$ d) $-2.5m$
- 3) The value of universal gas constant
a) $3.81 \text{ J mol}^{-1} \text{ K}^{-1}$ b) $8.03 \text{ J mol}^{-1} \text{ K}^{-1}$
c) $1.38 \text{ J mol}^{-1} \text{ K}^{-1}$ d) $8.31 \text{ J mol}^{-1} \text{ K}^{-1}$
- 4) Which of the following is correct?
a) Rate of change of charge is electrical power.
b) Rate of change of charge is current.
c) Rate of change of energy is current.
d) Rate of change of current is charge.
- 5) The volume occupied by 1 mol of a diatomic gas at STP is
a) 11.2 litre b) 5.6 litre c) 22.4 litre d) 44.8 litre
- 6) Chemical formula of rust is
a) $\text{FeO} \times \text{H}_2\text{O}$ b) $\text{FeO}_4 \times \text{H}_2\text{O}$ c) $\text{Fe}_2\text{O}_3 \times \text{H}_2\text{O}$ d) FeO
- 7) Solubility of NaCl in 100 ml water is 36g. If 20g of salt is dissolved in 100 ml of water. How much more salt is required for saturation _____.
a) 12g b) 11g c) 16g d) 20g
- 8) Which is formed during anaerobic respiration?
a) Carbohydrate b) Ethyl alcohol c) Acetyl CoA d) Pyruvate
- 9) The body of leech has
a) 23 segments b) 33 segments c) 38 segments d) 30 segments
- 10) Vomiting centre is located in
a) Medulla oblongata b) Stomach
c) Cerebrum d) Hypothalamus
- 11) _____ is found abundantly in liquid endosperm of coconut.
a) Gibberellin b) Cytokinin c) Auxin d) Ethylene
- 12) _____ the units form the backbone of the DNA.
a) 5 Carbon sugar b) Phosphate
c) Nitrogenous base d) Sugar phosphate

II. Short answer questions: [Any seven only]

7×2=14

[Question No. 15 is compulsory]

- 13) While catching a cricket ball the fielder lowers his hands backwards. Why?
- 14) What is refractive index?
- 15) How many electrons are passing per second in a circuit in which there is a current of 5A?
- 16) Give two examples of heterodiatomic molecules.
- 17) Classify the following substances into deliquescent, hygroscopic Conc, sulphuric acid, copper sulphate, penta hydrate, silicagel, calcium chloride and gypsum salt.

- 18) What is respiratory quotient?
- 19) How are arteries and veins structurally different from one another?
- 20) What is bolting? How can it be induced artificially?
- 21) Name of the secondary sex organs in male.
- 22) What are allosomes?

III. Long answer questions: [Write any seven only]

7×4=28

[Question No. 26 is compulsory]

- 23) State Newton's laws of motion.
- 24) Derive the ideal gas equation.
- 25) a) What are the advantages of LED TV over the normal TV?
b) Write the advantages of LED bulb.
- 26) A is a reddish brown metal, which combines with O_2 at $<1370K$ gives B a black coloured compound. At a temperature $>1370K$. A gives C which is red in colour. Find A, B and C with reaction.
- 27) In what way hygroscopic substances differ from deliquescent substances.
- 28) Describe and name three stages of cellular respiration that aerobic organisms used to obtain energy from glucose.
- 29) How does locomotion take place in leech?
- 30) What is transpiration? Give the importance of transpiration.
- 31) With a labelled diagram explain the structure of a Neuron.
- 32) a) Differentiate Monohybrid Cross and Dihybrid Cross.
b) What are Okazaki fragments?

IV. Answer in detail:

3×7=21

- 33) a) Describe the rocket propulsion.
b) List any three properties of light.
(OR)
- i) What is meant by electrical current?
ii) Name and define its unit.
iii) Which Instrument is used to measure the electric current? How should it be connected in a circuit?
- 34) Derive the relationship between Relative molecular mass and vapour density.
(OR)
- i) What happens when $MgSO_4 \cdot 7H_2O$ is heated? Write the appropriate equation.
ii) Define - Solubility.
iii) Differentiate - Saturated solution
- Unsaturated solution
- 35) a) Write the physiological effects of gibberellins.
b) Where are the Estrogens produced? What is the role of estrogens in the human body?
(OR)
- i) With a neat labelled diagram describe the parts of a typical angiospermic ovule.
ii) Write significance of DNA.