

QUARTERLY EXAMINATION 2022

I. ONE MARK 12X1=12

- 1) 98×10^4 dyne
- 2) -0.25 m
- 3) zero
- 4) Ohm
- 5) Carbondioxide
- 6) Galvanization
- 7) Cytoplasm
- 8) SA node
- 9) 12,31
- 10) Pituitary gland
- 11) Large Feathery stigma
- 12) Sugar phosphate

II. TWO MARK :

- 13) The ratio of the sine of the angle of incidence and sine of the angle of refraction is equal to the ratio of refractive indices of the two media.
 $\sin i / \sin r = \mu_2 / \mu_1$
- 14) One calorie is defined as the amount of heat energy required to rise the temperature of 1 gram of water through 1°C .
- 15) The number of atoms present in the molecule is called its 'atomicity'.
Ex. Oxygen O_2 ---2 atoms
- 16) 1. Blue vitriol – $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
2. Gypsum – $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
3. Deliquescence – NaOH
4. Hygroscopic – CaO
- 17) i. Dermal or Epidermal tissue system
ii) Ground tissue system
iii) Vascular tissue system
- 18) The short segments of DNA are called Okazaki fragments.
- 19) Dental formula is
(I= 2/1, C=0/0, PM= 3/2, M= 3/3) = 2033/1023
- 20) A. Exine
B. Intine
C. Vegetative nucleus (cell)
D. Generative nucleus (cell)
- 21) i. Regulate the flow of blood in a single direction
ii. Prevent backflow of blood.
- 22) $I=2A$, $V=30V$
 $R=V/I$, $R=30/2= 15 \text{ ohm}$.

III. 4 MARK

23) M

Mass	Weight
The quantity of matter contained in the body.	The gravitational force exerted on the the body
Unit is Kilogram (kg)	Unit is Newton (N)
Scalar quantity	Vector quantity
Fundamental quantity	Derived quantity

- 24) i. Light is a form of energy.
ii. Light always travels along a straight line.

- iii. Light does not need any medium .It can even travel through vacuum.
- iv. The speed of light in vacuum or air is,
 $c = 3 \times 10^8 \text{ ms}^{-1}$.
- iv. $c = v \lambda$ (c – velocity of light).
- v. Different coloured light has different wavelength and frequency.

- 25) 1. As there is no filament, there is no loss of energy in the form of heat. It is cooler than the incandescent bulb.
2. In comparison with the fluorescent light, the LED bulbs have significantly low power requirement.
3. It is not harmful to the environment.
4. A wide range of colours is possible here.
5. It is cost-efficient and energy efficient.
6. Mercury and other toxic materials are not Required

26)

Atoms	Molecule
An atom is the smallest particle of an element	A molecule is the smallest particle of an element or compound.
Atom does not exist in free state	Molecule exists in a free a state
Atoms are highly reactive	Molecules are less reactive
Atom does not have a chemical bond	Atoms in a molecule are held by chemical bonds

- 27) In the F1 generation, all are tall plants.
(Genotype all are Tt and phenotype all are tall).
In F2 generation,
genotype three tall and one dwarf.
[TT : Tt : tt = 1 : 2 : 1]
phenotype. Tall : dwarf
3 : 1 [TT : Tt : Tt : tt].
- 28) i) Transport of respiratory gases (Oxygen and CO_2).
ii) Transport of digested food materials to the different body cells.
iii) Transport of hormones.
iv) Transport of nitrogenous excretory products like ammonia, urea and uric acid.
v) It is involved in protection of the body and defense against diseases.
vi) It acts as buffer and also helps in regulation of pH and body temperature.
vii) It maintains proper water balance in the body.
- 29) 1. Application of gibberellins on plants stimulate extraordinary elongation of internode. e.g. Corn and Pea.
2. Treatment of rosette plants with gibberellin induces sudden shoot elongation followed by flowering. This is called bolting
3. Gibberellins promote the production of male flowers in monoecious plants (Cucurbits).
4. Gibberellins break dormancy of potato tubers.
5. Gibberellins are efficient than auxins in inducing the formation of seedless fruit - Parthenocarpic fruits (Development of fruits without fertilization) e.g. Tomato
- 30) i. External expression of a particular trait is known as phenotype.
A genotype is the genetic expression of an organism.
ii. # It is responsible for the transmission of hereditary information from one generation to next generation.
☑ # It contains information required for the formation of proteins.
☑ # It controls the developmental process and life activities of an organism.