# CMMC-2020

**STD XI – PHYSICS, CHEMISTRY, BIOLOGY | CBSE**

**Multiple Choice Questions | Number of questions: 120 | Max Marks: 120 | Time: 120 Minutes**

## PHYSICS (40 x 1 = 40 marks)

1) Acceleration due to gravity is always ....A.....while .....B.....can be attractive or repulsive.

Here, A and B refer to

A) Repulsive, Tension
B) Repulsive, Friction
C) Attractive, electromagnetic force
D) Repulsive, Contact force

2) Electric field is manifest itself in atmosphere, where

A) Atoms are non-ionised
B) Atoms are ionised and that leads to lightening
C) Atoms are ionised
D) Atoms are electrically neutral

3) For motion under an external conservative force, total ...A...is constant. Here, A refers to

A) Kinetic energy
B) Mechanical energy
C) Potential energy
D) Gravitational energy

4) Name the device used for measuring the mass of atoms and molecules

A) Spectrograph
B) Photograph
C) Cryptograph
D) Radiograph

5) If $3.8 \times 10^{-6}$ is added to $4.2\times 10^{-5}$ giving due regard to significant figures, then the result will be

A) $4.58 \times 10^{-5}$
B) $4.6 \times 10^{-5}$
C) $45\times 10^{-5}$
D) None of these

6) **Statement I** Average velocity tells us how fast an object has been moving over a given time interval.

**Statement II** Instantaneous velocity tells us how fast an object moves at different instants of time during a particular interval of time

Choose the correct option

A) Both the statements are correct
B) Statement I is correct
C) Statement II is correct
D) Neither statement I nor II is correct

7) The velocity of a particle is given as $v(t) = 3t^3 - 2t^2$ The instantaneous acceleration of the particle at t= 1 s is

A) 5 Units
B) 4 Units
C) 1 Unit
4) None of these

8) The displacement of a particle is given by $x = (t-2)^2$, where $x$ is in the particle in first 4s is

A) 8 m
B) 4m

C) 12m D) 16m

9) The component of vector A $=a_x\hat{\imath} + a_y\hat{\jmath} + a_z\,\hat{k}$ along the direction of $\hat{\imath} - \hat{\jmath}$ is

A) $a_x - a_y + a_z$ B) $a_x - a_y$

C) $(a_x - a_y)/\sqrt{2}$ D) $a_x + a_y + a_z$

10) At what point of a projectile motion, acceleration and velocity are perpendicular to each other?

A) At the point of projection
B) At the point of drop
C) At the top most point
D) Anywhere between the point of projection and top most points

11) A pellet of mass 1 g is moving with an angular velocity of 1 rad $s^{-1}$ along a circle of radius 1 m the centrifugal force is

A) 0.1 dyne B) 12 dyne

C) 10 dyne D) 100 dyne

12) A ball is travelling with uniform translator motion. This means that

A) It is a rest
B) The patch can be straight line or circular and the ball travels with uniform speed
C) All parts of the ball have the same velocity (magnitude and direction) and the velocity is constant
D) The centre of the ball moves with constant velocity and the ball spins about its centre uniformly.

13) A person of mass 50 kg stands on a weighting scale on a lift. If the lift is descending with a downward acceleration of $9m/s^2$, what would be the reading of the weighting scale ? $g = 10\,\frac{m}{s^2}$

A) 5 kg B) 4 kg

C) 10 kg D) 14kg

14) Find the angle between force F$=3\hat{\imath} + 4\hat{\jmath} - 5\hat{k})$ unit and displacement d$=$ $5\hat{\imath} + 4\hat{\jmath} + 3\hat{k})$ unit

A) $\cos^{-1}(0.49)$ B) $\cos^{-1}(0.32)$

C) $\cos^{-1}(0.60)$ D) $\cos^{-1}(0.90)$

15) Work done can be

A) Positive B) Negative

C) both (a) and (b) D) Neither (a) nor (b)

16) The radius of gyration of a body about an axis at a distance 6cm from its centre of

mass is 10 cm. Then, its radius of gyration about a parallel axis through its centre of mass will be

A) 80 cm
18) 8 cm
C) 0.8 cm
D) 80 cm

17) What is moment of inertia in terms of angular momentum (L) and kinetic energy (K)?

A) $\frac{L^2}{K}$
B) $\frac{L^2}{2K}$
C) $\frac{L}{2K^2}$
D) $\frac{L}{2K}$

18) The disc is rolling on the inclined plane, what is the ratio of its rotational KE to the total KE?

A) 1:3
B) 3:1
C) 1:2
D) 2:1

19) Consider the uniform square plate of side and mass m. The moment of inertia of this plate about an axis perpendicular to its plane and passing through one of its corner is

A) $5/6\ ma^2$
B) $1/2\ ma^2$
C) $7/12\ ma^2$
D) $2/3\ ma^2$

20) Two balls, each of radius R, equal mass and density are placed in contact, then the force of gravitation between them is proportional to

A) $F \propto \frac{1}{R^2}$
B) $F \propto R$
C) $F \propto R^4$
D) $F \propto \frac{1}{R}$

21) The radius of the Earth is R. The height of a point vertically above the Earth's surface at which acceleration due to gravity becomes 1% of its value at the surface is

A) 8 R
B) 9 R
C) 10 R
D) 20 R

22) The escape velocity of a body from the Earth is $v_e$ If the radius of Earth contracts to 1/4 th of its value, keeping the mass of the Earth constant, the escape velocity will be

A) Doubled
B) Halved
C) Tripled
D) Unaltered

23) Two spheres of masses m and M are situated in air and the gravitational force between them is F. The space around the masses is now filled with a liquid of specific gravity 3.

The gravitational force will now be

A) F
B)F/3
C) F/9
D) 3F

24) Identical springs of steel and copper are equally stretched. On which, more work will have to be done?

A) $W_{steel} < W_{copper}$ B) $W_{steel} > W_{copper}$
C) $W_{steel} = W_{copper}$ D) Both (b) and (c)

25) Write Copper, Steel, Glass and Rubber in order of increasing coefficient of elasticity.
A) Steel, Rubber, Copper, Glass B) Rubber, Copper, Steel, Glass
C) Rubber, Glass, Steel, Copper D) Rubber, Glass, Copper, Steel

26) The energy stored per unit volume in copper wire, which produces longitudinal strain of 0.1% is (Young's modulus $=1.1 \times 10^{11} Nm^{-2}$)
A) $11 \times 10^{3} Jm^{-3}$ B) $5.5 \times 10^{3} Jm^{-3}$
C) $5.5 \times 10^{4} Jm^{-3}$ D) $11 \times 10^{4} Jm^{-3}$

27) The top surface of an incompressible liquid is open to the atmosphere. The pressure at a depth $h_1$ below the surface is $p_1$. How does the pressure $p_2$ at depth $h_2 = 2h_1$ compare with $p_1$?
A) $p_2 > 2p_1$ B) $p_2 = 2p_1$
C) $p_2 < 2p_1$ D) $p_2 = p_1$

28) The pressure energy per unit volume of the water dam is
A) $Ahpg$ B) $hpg$
C) $1/2Ahpg$ D) $1/2pgh^2$

29) The temperature scales A and B are related by $\frac{A-42}{110} = \frac{B-72}{220}$. At which temperature two scales have the same reading?
A) $-42°C$ B) $-72°C$
C) $12°C$ D) $40°C$

30) A brass rod length 500 mm and diameter 3mm is joined to a steel rod of same length and diameter at 50°C. If the coefficients of linear expansion of brass and steel are 2.5 x $10^{-5°}$ $c^{-1}$ and 1.25 x $10^{-5°}$ $c^{-1}$ then change in length of the combined rod at 200° C is
A) 2.4 mm B) 2.8 mm
C) 3.2 mm D) 3.6 mm

31) A composite rod made of copper ($\propto = 1.8 \times 10^{-5} K^{-1}$ and steel ($\propto = 1.2 \times 10^{-5} K^{-1}$ is heated. Then,
A) It bends with steel on concave side
B) It bends with copper on concave side
C) It does not expand
D) Data is insufficient

32) Certain amount of heat is given to 100 g of copper to increase its temperature by 21° C. If the same amount of heat is given to 50 g water, then the rise in its temperature is ( specific heat capacity of copper $= 400J - kg^{-1}K^{-1}$ and that of water $= 4200J - kg^{-1}K^{-1}$
A) 4° C B) 5.2° C

C) 8° C D) 6° C

33) **Assertion** (A) If the temperature of two systems is not same it means that they must not be in thermodynamic equilibrium.

**Reason** (R) If the temperature of two systems is not same it means that they must be in thermal equilibrium.

A) A and R both are correct and R is the correct explanation of A
B) A and R both are correct but R is not the correct explanation of A
C) A is correct but R is incorrect
D) A is incorrect and R is correct

34) For isobaric process for one mole of an ideal gas

A) $p\left(\frac{\Delta V}{\Delta T}\right)_p = C_p - C_v$ B) $p\left(\frac{\Delta V}{\Delta P}\right)_p = R$

C) $V\left(\frac{\Delta V}{\Delta T}\right)_p = C_p - C_v$ D) $V\left(\frac{\Delta V}{\Delta T}\right)_p = R$

35) Which of the following is true in the case of an adiabatic process, where $\gamma = C_p/C_v$?

A) $p^{1-\gamma}T^{\gamma}$= constant B) $pv^{T\gamma} =$ constant
C) $p^{T\gamma} =$ constant D) $p^{\gamma}T =$ constant

36) Ten moles of an ideal gas at constant temperature 500 K is compressed from 50 L to 5L. Work done in the process is (given, R=8.311 $J - mol^{-1} - K^{-1}$

A) -1.2 X $10^4$ J B) -2.4 X $10^4$ J
C) -4.8 X $10^4$ J D) -9.6 X $10^4$ J

37) A perfect gas at 27°$C$ is heated at constant pressure so as to double its volume. The increase in temperature of a gas will be

A) 300° $C$ B) 54°
C) 327° D) 600°

38) At constant pressure, which of the following is true for an ideal gas?
( Where, $\rho =$ density of the gas and $v=$ rms speed off the gas)

A) $v\alpha\sqrt{p}$ B) $v\alpha\frac{1}{p}$
C) $v\alpha p$ D $v\alpha\frac{1}{\sqrt{p}}$

39) The displacement of an object attached to S spring and executing simple harmonic motion is given by $x = 2x\ 10^{-2}\ \cos\pi t\ \ m$. The time at which the maximum speed first occurs is

A) 0.5 s. B) 0.75 s.
C) 0.125 s D) 0.25 s

40) In a progressive way along $x$ direction, at a particular location the particles of the medium are executing

A) Oscillatory motion B) Rectilinear motion

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## CHEMISTRY (40 X 1 = 40 MARKS)

1. Hydrogen and oxygen are gases whereas compound formed by their combination i.e., water is a liquid. It is interesting to note that
   1. hydrogen burns with a ...A... sound.
   2. oxygen is a ...B... of combustion.
   3. water is used as a ...C....

   Here, A, B and C refer to
   A. A ---> pop, B --> supporter, C --> fire extinguisher
   B. A --> hush, B --> non-supporter, C --> propellent
   C. A --> laughter, B -->supporter, C --> solvent
   D. A --> dashing, B --> non-supporter, C --> fire extinguisher

2. Of the following substances, the greatest density is of
   A. 1000 g of water at 4 ºC
   B. 100.0 $cm^3$ of chloroform weighing 198.9 g
   C. a 10.0 $cm^3$ piece of wood weighing 7.72 g
   D. an ethyl alcohol-water mixture of density 0.83 $g/cm^3$

3. The least count of an instrument is 0.01 cm. Taking all precautions, the most possible error in the measurement can be
   A. 0.005 cm
   B. 0.01 cm
   C. 0.0001 cm
   D. 0.1 cm

4. If the molecular weights of $Na_2S_2O_3$ and $I_2$ are $M_1$ and $M_2$ respectively, then what will be the equivalent weight of $Na_2S_2O_3$ and $I_2$ in the following reaction?

$$2S_2O_3^{2-}{}^{2-} + I_2 \text{ -----> } S_4O_6^{2-} + 2I^-$$

   A. $M_1, M_2$
   B. $M_1, M_2/2$
   C. $2M_1, M_2$
   D. $M_1, 2M_2$

5. Given, that the abundances of isotopes $^{54}Fe$, $^{56}Fe$ and $^{57}Fe$ are 5%, 90% and 5% respectively, the atomic mass of Fe is
   A. 55.85
   B. 55.95
   C. 55.75
   D. 56.05

6. An aromatic hydrocarbon with empirical formula $C_5H_4$ on treatment with concentrated $H_2SO_4$ gave a monosulphonic acid, 0.104 g of the acid required 10 mL of $\frac{N}{20}$ NaOH for complete neutralisation. The molecular formula of hydrocarbon is
   A. $C_5H_4$ B. $C_{10}H_8$ C. $C_{15}H_{12}$ D. $C_{20}H_{16}$

7. A compound contains 54.55% carbon, 9.09% hydrogen, 36.36% oxygen. The empirical formula of this compound is
   A. $C_3H_5O$
   B. $C_4H_8O_2$
   C. $C_2H_4O_2$

D. $C_2H_4O$

8. Which is not true with respect to cathode rays?
   A. A stream of electrons
   B. Charged particles
   C. Move with speed as that of light
   D. Can be deflected by magnetic fields
   E. Can be deflected by electric fields

9. Which one of the following set of ions represents a collection of isoelectronic species?
   A. $K^+$, $Cl^-$, $Ca^{2+}$, $Sc^{3+}$
   B. $Ba^{2+}$, $Sr^{2+}$, $K^+$, $S^{2-}$
   C. $N^{3-}$, $O^{2-}$, $F^-$, $S^{2-}$
   D. $Li^+$, $Na^+$, $Mg^{2+}$, $Ca^{2+}$

10. Which transition in the hydrogen atomic spectrum will have the same wavelength as the transition, n = 4 to n = 2 of $He^+$ spectrum?
   A. n = 4 to n = 3
   B. n = 3 to n = 2
   C. n = 4 to n =2
   D. n =2 to n = 1

11. A gas absorbs photon of 355 nm and emits two wavelengths. If one of the emission is at 680 nm, the other is at
   A. 1035 nm
   B. 325 nm
   C. 743 nm
   D. 518 nm

12. Consider the ground state of Cr atom (Z = 24). The numbers of electrons with the azimuthal quantum numbers, l=1 and 2 are respectively
   A. 12 and 4
   B. 12 and 5
   C. 16 and 4
   D. 6 and 5

13. The electros, identified by the quantum numbers n and l,
   i. n = 3; l = 2
   ii. n = 5; l = 0
   iii. N = 4; l = 1
   iv. n = 4; l =2
   v. n = 4; l = 0

   can be placed in the order of increasing energy, as
   A. I < V < III < IV < II
   B. I < V < III < II < IV
   C. V < I < III < II < IV
   D. V < I < II < III < IV

14. According to IUPAC nomenclature, the name of element having atomic number 116 is
   A. Unnilunium
   B. Ununoctium
   C. Ununhexium

D. Unnilhexium

15. Electronic configuration of Zn, Cd and Hg is
A. $(n-1)d^{10}ns^2$
B. $(n-1)d^9ns^2$
C. $(n-1)d^8ns^2$
D. $(n-1)d^8ns^2np^1$

16. Among the elements Ca, Mg, P and Cl, the order of decreasing atomic radii is
A. Ca > Mg > P > Cl
B. P > Cl> Ca > Mg
C. Mg > Ca > Cl > P
D. Cl > P > Mg > Ca

17. Among the following, O, Cl, F, N, P, Sn, Tl, Na, Ti the number of elements showing only one non-zero oxidation state is
A. 1
B. 2
C. 3
D. 4

18. The electronic configuration of most electronegative element is
A. $1s^2, 2s^2\ 2p^5$
B. $1s^2, 2s^2\ 2p^4, 3s^1$
C. $1s^2, 2s^2\ 2p^6, 3\ s^1\ 3\ p^1$
D. $1s^2, 2s^2\ 2p^6, 3s^2\ 3p^5$

19. The atomic numbers of elements A, B, C and D are Z – 1, Z, Z + 1 and Z + 2, respectively.
If 'B' is a noble gas, choose the correct statement among the following statements.
I. 'A' has higher electron affinity.
II. 'C' exists in +2 oxidation state.
III. 'D' is an alkaline earth metal.
A. I and II
B. II and III
C. I and III
D. I, II and III

20. Which one of the following noble gases has a duplet of electron in its outer shell?
A. Neon
B. Argon
C. Helium
D. Xenon

21. When a metal combines with a non-metal atom, the non-metal atom will
A. loses electrons and decrease in size
B. loses electrons and increase in size
C. gains electrons and decrease in size
D. gains electrons and increase in size

22. Lattice energy of an ionic compound depends upon
    A. charge on the ion and size of the ion
    B. packing of ions only
    C. size of the ion only
    D. charge on the ion only
23. The structure of $IF_7$ is
    A. square pyramidal
    B. trigonal bipyramidal
    C. octahedral
    D. pentagonal bipyramidal
24. Correct order of bond angles in $NH_3$, $PCl_3$ and $Bcl_3$ is
    A. $PCl_3 > NH_3 > BCI_3$
    B. $NH_3 > Bcl_3 > PCl_3$
    C. $NH_3 > Pcl_3 > BCl_3$
    D. $BCl_3 > NH_3 > PCl_3$

25. The number of types of bonds between two carbon atoms in calcium carbide is
    A. one sigma, two pi
    B. one sigma, one pi
    C. two sigma, one pi
    D. two sigma, two pi
26. Which one of the following constitutes a group of the isoelectronic species?
    A. $C_2^{2-}$, $O_2^-$, CO, NO
    B. $NO^+$, $C_2^{2-}$, $CN^-$, $N_2$
    C. $CN^-$, $N_2$, $O_2^{2-}$, $C_3^{2-}$
    D. $N_2$, $O_2^-$, $NO^+$, CO
27. [X] and [Y] are two nitrates of alkali metals [X] and [Y] on decomposition produces oxides and nitrites respectively. Here [X] and [Y] refer to
    A. $LiNO_3$ and $KNO_3$
    B) $LiNO_3$ and $LiNO_3$
    C) $KNO_3$ and $LiNO_3$
    D) None of these
28. Which one of the alkali metals forms only the normal oxide $M_2O$ on heating in air?
    A. Rb
    B. K
    C. Li
    D.Na
29. In diborane, the two H-B-H angles are nearly
    A. 60°, 120°
    B. 95°, 120°
    C. 95°, 150°
    D. 120°, 180°
30. The term anomers of glucose refers to
    A. Isomers of glucose that differ in configurations at carbons one and four (C-1) and (C-4)
    B. A mixture of (D) – Glucose and (L) – glucose
    C. Enantiomers of glucose

D. Isomers of glucose that differ in configuration at carbon one (C-1)

31. In which of the following compounds, H-bond exist ?

I. HF II. $NH_3$ III. $H_2$oIV. HI

Select the correct option

A) Only I and II
B) only III and IV
C) I, II and III
D) I, III and IV

32. A bubble of gas released at the bottom of a lake increased to 8 times its original volume when it reaches the surface. Assuming that atmospheric pressure is equivalent to the pressure exerted by a column of water, 10 m height, the depth of the lake is

A. 80 m
B. 90 m
C. 40 m
D. 70 m

33) The internal energy change a system goes from state A to B is 40 $kJ/mol$. If the system goes from A to B by a reversible path and returns to state A by an irreversible path, what would be the net change in internal energy?

A. 40 $kJ$
B. $> 40kJ$
C. $< 40kJ$
D. Zero

34) The bond dissociation energies of $H_2$ $Cl_2$ and HCl are 104, 58 and 103 kcal $mol^{-1}$ respectively. Then enthalpy of formation of HCl would be

A. -22 kcal $mol^{-1}$
B. -44 kcal $mol^{-1}$
C. +44 kcal $mol^{-1}$
D. +22 kcal $mol^{-1}$

35. Which of the following is not a physical equilibrium?

A. Ice ⇋ water
B $I_2(s) \leftrightharpoons I_2(g)$
C.$S(l) \leftrightharpoons S(g)$
D. $3O_2 \leftrightharpoons 2O_3$

36) $N_2 + 3H_2 \leftrightharpoons 2NH_3 + heat$ . What is the effect of the increase of temperature on the equilibrium of the reaction.

A. equilibrium is shifted to the left
B. equilibrium is shifted to the right
C. equilibrium is unaltered
D. Reaction rate does not change

37) Oxidation states of X,Y,Z are +2, +5 and -2 respectively. The formula of the compound formed by these will be

A. $X_2YZ_6$
B. $XY_2Z_6$
C. $XY_5$
D. $X_3YZ_4$

38. Radioactive isotope of hydrogen is
    A. Tritium
    B. Deuterium
    C. Para hydrogen
    D. Ortho hydrogen
39. Low solubility of CsI is due to
    A. Low lattice energy
    B. High lattice energy
    C. Low hydration energy
    D) High hydration energy
40. Petroleum and natural gas are the main sources of ….A…. here, A refers to
    A. Alkanes
    B. Hydrocarbons
    C. Alkenes
    D) Alkynes

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## BIOLOGY (40 X 1 = 40 marks)

1. Growth in unicellular organisms can be observed by
    A. counting the mass of cultured cells
    B. analysing the amount of nutrient absorbed by living organism
    C. growth cannot be observed
    D. in vitro culture by simply counting the number of cells under microscope

2. True regeneration is found in
    A. Amoeba
    B. Hydra
    C. Planaria
    D. Bacteria

3.A living organism can be easily distinguished from non-living on the basis of
    A. responsiveness to touch stimuli
    B. movement and growth
    C. reproduction
    D. interaction with environment and progressive evolution

4.Biological organisation level of living being can be represented as
    A. Sub-cellular ----> Cellular ---> Individual ---> Population
    B. Atomic ---> Molecular ---> Cellular ---> Tissue ---> Organ ---> Organ systems ---> Individual
    C. Organ system ---> Tissue ---> Cellular ---> Molecular ---> Atomic
    D. Individual ---> Molecular ---> Tissue ---> Organ system ---> Population

5.Cyanobacteria is also known as
A. blue-green algae
B. heterophic bacteria
C. chemosynthetic autotrophic bacteria
D. chemosynthetic bacteria

6.Nostoc and Anabaena belongs to
A. eubacteria
B. archaebacteria
C. cynobacteria
D. coccibacteria

7.Heterocysts present in Nostoc are specialised for
A. photosynthesis
B. food storage
C. nitrogen fixation
D. fragmentation

8.Citrus canker is a
A. viral disease
B. bacterial disease
C. fungal disease
D. protozoan disease

9.Viruses did not find a place in classification since
A. they are truly living
B. they are non-cellular
C. they are obligate parasite
D. they are pathogenic

10.Phylogenetic system of classification is based upon
A. evolutionary relationship of organism
B. cytological information
C. structural embryology
D. All of the above

11.The members of chlorophyceae are usually green due to dominance of pigments
A. chlorophyll-a
B. chlorophyll-b
C. chlorophyll-a and b
D. chlorophyll-c

12.Which of the following does not belong to class-phaeophyceae(brown algae) ?
A. Ectocarpus and Dictyota
B. Laminaria and Sargassum
C. Fucus and Dictyota
D. Polysiphonia and Gelidium

13.Rhodophytes are commonly called as
A. blue-green algae
B. red algae
C. brown algae
D. green algae

14.Megasporophyll is the term used in gymnosperm to denote
A. carpel
B. leaves
C. female cone
D. stamens

15.Double fertilisation is charecteristic feature of

A. gymnosperms
B. angiosperms
C. monocots
D. bryophytes

16.Organ system level of organisation is observed in
A. chordates
B. annelids
C. molluses
D. all of these

17.The direct elongation of radicle leads to the formation of
A. stem
B. primary root
C. secondary root
D. tertiary root

18.Primary roots and its branches constitute the
A. tap root system
B. adventitious root system
C. tertiary root system
D. fibrous root system

19.Which of the following statement is correct
A. study of internal structure is called anatomy
B. plants have cells as the basic unit cells are organised into tissues
C. tissues are organised into organs
D. all of the above

20.Specialised regions of plants having active cell division are called
A. tissues

B. organs
C. meristems
D. all of these

21.Apical meristem are present at the
A. tips of roots
B. tips of shoots
C. lateral sides of roots and shoots
D. both (a) and (b)

22.Tissue is
A. a group of similar cells together with their associated cell intercellular substances which performs specific functions
B. a single cell with specified functions
C. composed of a single layer with cube-like cells
D. none of the above

23.On the basis of structure and functions animal tissues are classified into
A. 3 types
B. 2 types
C. 1 type
D. 4 types

24.A group of similar cells which along with intercellular substances perform a specific function in multicellular organisms are called
A. organs
B. cell system
C. tissues
D. categorised body

25. Which of the following is not a function of epithelium ?
A. protection
B. connection
C. secretion of excretion
D. adsorption

26. Unicellular organisms are
A. not capable of independent existence because they cannot perform all the essential
functions of life
B. not capable of independent existence but they can perform all the essential functions of life
C. capable of independent existence and can perform all the essential vital functions
D. capable to lead independent existence but they perform few vital functions of life

27. Select the incorrect statement
A. robert brown disovered cell
B.antony von leeuwenhoek first saw and described a living cell
C. cell is the basic unit of structure and function of all organisms
D. anything less than a complete structure of a cell do not ensure independent living

28. Which of the following feature is common to prokaryots and many eukaryotes ?o
A. cell wall is present
B. chromosomes are present
C. sub-cellular organelles are present
D. nuclear membrane is present

29. After doing the chemical analysis of organic compounds found in living organisms, two fractions where observed namely
A. acid soluble pool and acid insoluble pool
B. carbon pool and hydrogen pool
C. inorganic pool and organic pool
D. aqueous pool and non-aqueous pool

30. Types of amino acids found in protiens are
A.21
B.19
C.20
D.23

31. Name the most abundant protein in animal world.
A. RUBISCO
B. Carboxylase-oxygenase
C. Collagen
D. cellulose

32. Which of the following statement is true for cells in G0 stage of a cell cycle?
A. Cells in G0 stage are metabolically more active
B. cells are metabolically inactive
C. cells are metabolically active but no longer proliferate in normal condition
D. none of the above

33. Chromatid formation takes place in
A. S-phase
B. metaphase
C. G1-phase
D. G2-phase

34. Select the correct option with respect to mitosis
A. chromatids start moving towards opposite poles in telophase

B. golgi complex and endoplasmic recticulum are still visible at the end of prophase
C. chromosomes moves to the spindle equator and get aligned along equatorial plate in metaphase
D. chromatics tids separate but remains in the centre of the cell in anaphase

35. Uphill transport is a type of
A. active transport
B. passive transport
C. facilitated diffusion
D. simple diffusion

36. Which of the following transport induces conformational changes in proteins?
A. simple diffusion
B. osmosis
C. facilitated diffusion
D. plasmolysis

37. The first process responsible for the entry of water into a seed, when it is placed in a suitable environment of germination is
A. absorption
B. imbibition
C. active transport
D. osmosis and diffusion

38. Regarding root pressure, which one is not correct ?
A .it is sufficient to rise water above ground level
B. it is positive in all except the tallest trees
C. it do not act as driving force for the mass flow of sugar
D. it is not able to push water up to small height in the stem

39. In which of the following conditions, plants cannot be grown?
A. soil without microelements
B. soil without macroelements
C. both (A) and (B)
D. none of these

40. Plants uptake minerals present in the soil, mostly through
A. shoot
B. photosynthesis
C. roots
D. none of these