Physics

MEASUREMENTS

1. *Silicon can be obtained from:*
(A) Lead (B) Uranium
(C) An isotope of oxygen (D) Sand

2. *Light year is a unit of:*
(A) Time (B) Distance
(C) Velocity (D) Intensity of light

3. *1 gm-cm^{-1} is equal to:*
(A) 10^{3} kg-m^{3} (B) 10^{-3} kg-m^{-3}
(C) 1 kg-m^{-3} (D) 10^{5} kg-m^{-1}

4. *Which one is the least multiple:*
(A) Pico (B) Femto
(C) Nano (D) Atto

5. *Significant figures in 0.0010 are:*
(A) Four (B) Three
(C) Two (D) One

6. *Resistance of a wire has been calculated by* $R = \frac{V}{I}$ *as 6.2 Ω with 8% uncertainty. Then the result in ohms will be recorded as:*
(A) 6.2 ± 8 (B) 6.2 ± 4
(C) 6.2 ± 2 (D) 6.2 ± 0.5

7. *Addition of 2.189 kg, 0.089 kg, 11.8 kg and 5.32 kg gives the rounded off answer as:*
(A) 19.393 (B) 19.400
(C) 19.4 (D) 19.3

8. *Which quantity has different dimensions:*
(A) Work (B) Pressure
(C) Energy (D) Torque

9. *The quantity having dimension of $ML^{2}T^{-3}$ will have SI unit of:*
(A) Watt (B) Newton
(C) Joule (D) Metre

10. *The time taken by light to travel from Moon to Earth is:*
(A) 80 sec (B) 500 sec
(C) 1.602×10^{4} sec (D) Aerophysics

ANSWERS

D	2.	B	3.	A	4.	D	5.	C
D	7.	C	8.	B	9.	C	10.	A

VECTORS & EQUILIBRIUM

1. *Which is correct?*
(A) $\vec{A} = \frac{A}{\hat{A}}$ (B) $A = \frac{A}{\vec{A}}$
(C) $\vec{A} = \frac{\vec{A}}{\hat{A}}$ (D) $A = \frac{\hat{A}}{\vec{A}}$

2. *The direction of a vector in space is specified by:*
(A) One angle (B) Two angles
(C) Three angles (D) None of above

3. *Distance AB between the points A (2,3,4) and B (-5,6,7) is given by:*
(A) $7\hat{i} + 9\hat{j} + 11\hat{k}$ (B) $-7\hat{i} - 9\hat{j} - 11\hat{k}$
(C) $-3\hat{i} - 3\hat{j} - 3\hat{k}$ (D) $-7\hat{i} + 3\hat{j} + 3\hat{k}$

4. *If $\vec{A} = 2\hat{i} + 3\hat{j} - 4\hat{k}$, then its magnitude will be:*
(A) $\sqrt{-3}$ (B) $\sqrt{-1}$
(C) -1 (D) $\sqrt{29}$

5. *Which one is correct?*
(A) $A\cos\theta = \frac{\vec{A}.\vec{B}}{B}$ (B) $A\cos\theta = \frac{B}{\vec{A}.\vec{B}}$
(C) $A\cos\theta = \frac{\vec{B}}{A.B}$ (D) $A\cos\theta = \frac{\vec{A}.\vec{B}}{\vec{B}}$

6. *Work done by the force $3\hat{i} + 2\hat{j}$ for a distance $4\hat{i} + 5\hat{j}$ will be:*
(A) 12 units (B) 22 units
(C) 32 units (D) 42 units

7. *The product of mass and velocity gives momentum of certain body. This product is called:*
(A) Dot product (B) Cross product
(C) Simple product (D) None of these

8. *Magnitude of torque acting on a body determines:*
(A) Linear acceleration (B) Angular acceleration
(C) Mass (D) Moment arm

9. *Torque is also called:*
(A) Momentum (B) Linear inertia
(C) Moment of a force (D) Mass

10. *The perpendicular distance from the axis of rotation to the line of action of force is called:*

(A) Moment arm (B) Moment of a force
(C) Torque (D) None of these

ANSWERS

1.	C	2.	C	3.	D	4.	D	5.	A
6.	B	7.	C	8.	B	9.	C	10.	A

MOTION & FORCE

1. When brakes are applied to a fast moving car, the passengers will be thrown:
(A) Forward (B) Backward
(C) Downward (D) None of these

2. The direction of acceleration of a body moving in a straight line is:
(A) Along $\Delta\vec{V}$ (B) Perpendicular to $\Delta\vec{V}$
(C) Towards origin (D) None of these

3. Consult page 50 of your text and tick the correct statement:
(A) Velocity of x-rays is greater than velocity of light (B) Velocity of light is less than velocity of radio waves
(C) Velocity of light, x-rays and radio waves is the same (D) None of above is correct

4. The law of conservation of linear momentum is valid for:
(A) Atoms only (B) Molecules only
(C) Other systems only (D) All of them

5. If V denotes volume of the liquid coming out of a pipe per second, v its velocity and A as area of the pipe, then the correct formula will be:
(A) $V = v \times A$ (B) $v = V \times A$
(C) $A = v \times V$ (D) None of these

6. If m means mass of gases ejected per second from a rocket and v shows the change in velocity, then mv is named as:
(A) Force (B) Energy
(C) Work (D) Impulse

7. Range of the projectile is the same for the following pair of angles:
(A) 0° and 45° (B) 35° and 55°
(C) 15° and 60° (D) 30° and 75°

8. For maximum horizontal range, the angle of projection must be:
(A) 0° (B) 45°
(C) 60° (D) 90°

9. At the highest point, we can claim that:
(A) Resultant velocity is zero (B) Only horizontal component of velocity is zero
(C) Only v, is zero (D) Nothing of above

10. A projectile is thrown at an angle of 30° with horizontal with a velocity of 980 m sec^{-1}. The time of flight to reach the highest point of its trajectory is:
(A) 50 sec (B) 100 sec
(C) 150 sec (D) 250 sec

ANSWERS

1.	A	2.	A	3.	C	4.	D	5.	A
6.	A	7.	B	8.	B	9.	C	10.	A

WORK & ENERGY

1. Work done along a closed path in a gravitational field is:
(A) Maximum (B) Minimum
(C) Zero (D) Unity

2. Tick the conservative force:
(A) Tension in a string (B) Air resistance
(C) Elastic spring force (D) Frictional force

3. A body of weight 1 N has a kinetic energy of 1 Joule when its speed is:
(A) 1.46 m sec^{-1} (B) 2.44 m sec^{-1}
(C) 3.42 m sec^{-1} (D) 4.43 m sec^{-1}

4. When two protons are brought closer potential energy of both of them:
(A) Increases (B) Decreases
(C) Remains same (D) None of these

5. The velocity given to a body to go out of the influence of Earth's gravity is known as:
(A) Terminal velocity (B) Orbital velocity
(C) Escape velocity (D) None of these

6. One KWh is equal to:
(A) 3.6×10^2 J (B) 3.6 KJ
(C) 3.6×10^1 KJ (D) 3.6 MJ

7. The consumption of energy by a 1000 w heater in half an hour is:
(A) 5 Kwh (B) 0.5 Kwh
(C) 2.5 Kwh (D) 3.2 Kwh

8. Biomass includes:
(A) Crop residue (B) Natural vegetation
(C) Animal dung (D) All of these

9. Root out the conventional source of ener
(A) Energy from biomass (B) Hydroelectric energy
(C) Geothermal energy (D) None of thes

10. Ethanol (alcohol) is a type of.
(A) Electric fuel (B) Bio fuel

(C) Nuclear fuel (D) None of these

ANSWERS

1.	C	2.	C	3.	D	4.	A	5.	C
6.	D	7.	B	8.	D	9.	B	10.	B

CIRCULAR MOTION

1. *Conventionally the angular velocity is directed at an angle of:*
   (A) 90° to the axis of rotation (B) 30° to the axis of rotation
   (C) 0° to the axis of rotation (D) None of the above
2. *If a toy car moves with a uniform speed of 2 m/sec in a circle of 0.4 m radius. His angular velocity in rev/sec is:*
   (A) 10π (B) 0.8
   (C) 0.2π (D) None
3. *Thirty-six degrees is equal to:*
   (A) $\frac{\pi}{5}$ (B) $\frac{\pi}{8}$
   (C) $\frac{\pi}{12}$ (D) $\frac{\pi}{6}$
4. *The relation between τ, I and α is as follows:*
   (A) $\tau = I^2\alpha$ (B) $\alpha = \tau I$
   (C) $I = \alpha\tau$ (D) $\tau = I\alpha$
5. *If a gymnast sitting on a rotating stool with his arms outstretched, brings his arms towards the chest, then its angular velocity will:*
   (A) Increase (B) Decrease
   (C) Remain constant (D) None of these
6. *The net force acting on a 100 kg man standing in an elevator accelerating downward with a = 9.8 m sec^{-2} comes out to be.*
   (A) 980 N (B) 580 N
   (C) 1380 N (D) Zero
7. *A ball tied at one end of the string is swung in a vertical circle of radius r under action of gravity. The net force towards centre at the top most point is:*
   (A) T - W (B) T + W
   (C) W - T (D) None of these
8. *The number of "Earth stations" which transmit signals to satellites and receive signals from them are:*
   (A) 3 (B) 24
   (C) 126 (D) 200
9. *INTELSAT operates at frequencies 4, 6, 11, 14 having unit of:*
   (A) KHz (B) MHz
   (C) GHz (D) BHz
10. *Einstein's theory about gravity is better than Newton's because it gave explanation of:*
    (A) Inverse square law (B) Bending of light
    (C) Both A and B (D) None of above

ANSWERS

1.	C	2.	A	3.	A	4.	D	5.	B
6.	D	7.	B	8.	D	9.	C	10.	C

FLUID DYNAMICS

1. *The property of fluids due to which they resist their own flow is called:*
   (A) Drag force (B) Surface tension
   (C) Viscosity (D) None of these
2. *Density of a fluid is defined as:*
   (A) Its volume to mass ratio (B) Product of volume and mass
   (C) Its mass of volume ratio (D) None of these
3. *Stoke's law holds for:*
   (A) Motion through free space (B) Motion through viscous medium
   (C) Bodies of all shapes (D) None of these
4. *Fog droplets are suspended in air when their weight is balanced by:*
   (A) Force of gravity (B) Upward thrust due to air
   (C) Surface tension (D) None of these
5. *The equation of continuity is defined as $A_1v_1 = A_2v_2$. Unit of A_1v_1 is:*
   (A) Cubic meter (B) Cubic meter per second
   (C) Square meter per second (D) None of these
6. *Turbulent flow is:*
   (A) Unsteady and regular (B) Steady and irregular
   (C) Unsteady and irregular (D) None of these
7. *Unit of density to mass ratio is:*
   (A) m^2 (B) m^3
   (C) $kg\text{-}m^3$ (D) None of these
8. *Volume of a cylinder can be found by:*
   (A) $\frac{4}{3}\pi r^3$ (B) $\pi r^2 l$
   (C) Length × breadth × height (D) None of these
9. *Normally, the blood pressure (torr unit) in a healthy human body varies from:*

(A) 200 to 100 (B) 150 to 70
(C) 120 to 80 (D) 100 to 60

12. *Inflatable bag is a part of:*
(A) Sphygmomanometer (B) Stethoscope
(C) Thermometer (D) None of these

ANSWERS

1.	C	2.	C	3.	B	4.	B	5.	B
6.	C	7.	C	8.	B	9.	C	10.	A

OSCILLATIONS

1. *When quarter of a cycle is completed, the phase of vibration is:*
(A) 90° (B) 180°
(C) 45° (D) 360°

2. *Distance covered during one vibration of an oscillating body in terms of amplitude A is:*
(A) A (B) 2 A
(C) 3 A (D) 4 A

3. *A body of mass 0.031 kg attached to one end of a spring of spring constant 0.3 N/m, then time period of spring mass system will be:*
(A) 1.5 sec (B) 2.0 sec
(C) 2.3 sec (D) 2.5 sec

4. *The time period of a simple pendulum is independent of its:*
(A) Length (B) Mass
(C) Value of g (D) Both A and B

5. *If time period of a pendulum is doubled by increasing its length, then its frequency will:*
(A) Also be doubled (B) Become half
(C) Become one fourth (D) Becomes four times

6. *The string of a simple pendulum should be:*
(A) Heavy (B) Extensible
(C) Inextensible (D) None of these

7. *Second's pendulum is the pendulum whose time period is:*
(A) 1 second (B) 2 seconds
(C) 3 seconds (D) None of these

8. *An object undergoes SHM. Its maximum speed occurs when its displacement from equilibrium position is:*
(A) Maximum (B) Half of its maximum value
(C) Zero (D) None

9. *Free oscillations are always produced by:*
(A) An applied force (B) Gravitational force
(C) Restoring force and inertia (D) Inertia only

10. *If the waves produced in a microwave oven are of wave-length 12 cm, then their frequency will be:*
(A) 2500 MHz (B) 0.25 MHz
(C) 2500 KHz (D) None of these

ANSWERS

1.	A	2.	D	3.	B	4.	B	5.	B
6.	C	7.	B	8.	C	9.	C	10.	A

WAVES

1. *The square root of 0.4 is _____*
(A) Greater than 0.4 (B) Smaller than 0.4
(C) Equal to 0.4 (D) None of these

2. *Wavelength and time period T are related to the velocity v of the wave as:*
(A) $\lambda = \frac{T}{v}$ (B) $\lambda = \frac{v}{T}$
(C) $\lambda = Tv$ (D) None of these

3. *The ratio of speed of sound in hydrogen to the speed of sound in oxygen is:*
(A) 4:1 (B) 1:4
(C) 8:1 (D) 1:8

4. *If the atmospheric pressure is doubled, the speed of sound:*
(A) Increases by 61 cm sec^{-1} (B) Decreases by 61 cm sec^{-1}
(C) Remains constant (D) None of these

5. *Two identical tuning forks vibrate at 256 c/sec. After loading one of them, 6 beats /sec are heard when forks are sounded together. The period of the loaded fork is:*
(A) 2×10^{-3} sec (B) 3×10^{-3} sec
(C) 4×10^{-3} sec (D) 0.006 sec

6. *The effect of loading the prongs of a tuning fork with wax is to:*
(A) Increase the frequency (B) Decrease the frequency
(C) Maintain the orginal frequency (D) All of these

7. *Given for (cylindrical) metal wire, ρ = 1 kg/m^3, diameter = 2mm, ℓ = 32 cm, find out mass:*
(A) 1 gram (B) 10 gms
(C) 100 gms (D) 1 kg

8. *The wavelength of sound produced by open end organ pipe in nth mode is:*
(A) $\frac{2l}{n}$ (B) 2nl
(C) 2n + 1 (D) None of these

9. *In which case, Doppler's effect is used:*
(A) Radar (B) Sonar
(C) To find speed of stars (D) All of these

10. As an empty test tube is filled with water, frequency of the air column:
(A) Decreases (B) Remains same
(C) Increases (D) None of these

ANSWERS

1.	A	2.	C	3.	A	4.	C	5.	C
6.	B	7.	A	8.	A	9.	D	10.	C

PHYSICAL OPTICS

1. Frequency of red colour as compared to that of violet colour is:
(A) Equal (B) Smaller
(C) Greater (D) None of these

2. Phase change of 180° is equivalent to a path difference of:
(A) 2λ (B) λ
(C) $\lambda/2$ (D) $\lambda/4$

3. Conditions for interference are that the two sources should be coherent and:
(A) At a far off distance (B) Close together
(C) Coinciding (D) None of these

4. To find wavelength of light by his experiment, Newton utilized:
(A) Principle of phase change (B) Snell's law
(C) Bragg's law (D) Both A and C

5. Wavelength of light can be found by means of Michelson Interferometer using the formula:
(A) $\lambda = \frac{2m}{L}$ (B) $\lambda = \frac{L}{2m}$
(C) $\lambda = \frac{m}{2L}$ (D) $\lambda = \frac{2L}{m}$

6. A grating has 5000 lines per centimeter. Then grating element will be given as:
(A) 2×10^{-5} m (B) 2×10^{-6} m
(C) 2×10^{-10} m (D) 2×10^{-4} m

7. Diffraction effect is:
(A) More for a round edge (B) More for a sharp edge
(C) Less for a sharp edge (D) None of these

8. In Bragg's equation, d represents:
(A) Grating element (B) Slit separation
(C) Interplaner spacing (D) None of these

9. X-ray diffraction has been used in studying the:
(A) Crystal structure (B) Haemoglobin
(C) Double helix structure of DNA (D) All of these

10. Which of the following cannot be polarized.
(A) Ultraviolet rays (B) Sound waves
(C) Radio waves (D) X-rays

ANSWERS

1.	B	2.	C	3.	B	4.	A	5.	D
6.	A	7.	B	8.	C	9.	D	10.	B

OPTICAL INSTRUMENTS

1. With age, least distance of distinct vision:
(A) Increases (B) Decreases
(C) Is not affected (D) None is correct

2. Conventionally, all the distances p, q, f are measured from _____ of the lens.
(A) Focus (B) Optical centre
(C) Edges (D) None of these

3. The image of an object 5 mm length is only 1 cm high. The magnification produced by lens is:
(A) 1 (B) 0.2
(C) 2 (D) 0.1

4. Resolving power in mth order diffraction for grating is given by:
(A) $R = \frac{N}{m}$ (B) $R = \frac{m}{N}$
(C) $R = N \times m$ (D) None of these

5. The working of compound microscope is based on the principle of:
(A) Reflection (B) Refraction
(C) Both A and B (D) None of these

6. A spectrometer is used to study:
(A) Working of a telescope (B) Working of collimator
(C) Construction of turn-table and circular scales (D) Spectra

7. The magnifying power of an astronomical telescope increases with:
(A) Decreasing f_o (B) Increasing f_e
(C) Increasing f_o (D) None of these

8. In Michelson's experiment, the rotational mirror and plane mirror were mounted on:
(A) The same mountain (B) Different mountains
(C) One on the mountain and the other on the ground (D) None of these

9. A material having high refractive index has:
(A) Low density (B) High density
(C) Zero density (D) None of above

10. Multi-mode step index fibre has diameter of:

(A) Above 50 μ m (B) Below 50 μ m
(C) Aboul 50 μ m (D) None of these

ANSWERS

1.	A	2.	B	3.	C	4.	C	5.	B
6.	D	7.	B	8.	B	9.	B	10.	C

HEAT & THERMODYNAMICS

1. *Avogadro number is known as number of molecules in:*
(A) One kg of a substance (B) Unit volume of a substance
(C) One mole of a substance (D) None of these

2. *The nature of thermal radiation is similar to:*
(A) Ultraviolet rays (B) Light rays
(C) Both of them (D) None of them

3. *In which process, the change in internal energy of the system is zero:*
(A) Isochonc process (B) Isobaric press
(C) Adiabatic process (D) Isothermal process

4. *If A is the area of the piston and Δy is the distance moved by the piston, then change in volume is expressed by:*
(A) $\frac{A}{\Delta y}$ (B) $\frac{\Delta y}{A}$
(C) $A + \Delta y$ (D) $A\Delta y$

5. *Carnot cycle is:*
(A) Reversible (B) Ireversible
(C) Sometimes A, sometimes B (D) None of these

6. *The efficiency of a practical heat engine:*
(A) Can be 100% (B) Cannot be 100%
(C) Is always zero (D) None of these

7. *Number of spark plugs needed in diesel engine is:*
(A) Four (B) Five
(C) Six (D) None of these

8. *No entropy change is associated with:*
(A) Isothermal process (B) Adiabatic process
(C) Isobanc process (D) None of them

9. *Only those processes are probable to take place for which entropy of the system:*
(A) Increases (B) Remains constant
(C) Both A and B are correct (D) None of above

10. *When heat is added to the system, the entropy change is:*
(A) Positive (B) Negative
(C) Zero (D) None of these

ANSWERS

1.	C	2.	C	3.	D	4.	D	5.	A
6.	B	7.	D	8.	B	9.	C	10.	C

ELECTROSTATICS

1. *If the distance between two charges is doubled, the force between them will become:*
(A) Double (B) Half
(C) Three times (D) One fourth
(E) One third

2. *The value of ε_0 in Coulomb's law is:*
(A) $9 \times 10^9\ Nm^2\ C^{-2}$ (B) $8.85 \times 10^{-12}\ C^2\ N^{-1}\ m^{-2}$
(C) $8.85 \times 10^{-12}\ Nm^2\ C^{-2}$ (D) $9 \times 10^9\ C^2\ N^{-1}\ m^{-2}$
(E) None of these

3. *The SI unit of constant k in Coulomb's law is:*
(A) Nm^2C^{-2} (B) $C^2N^{-1}m^{-2}$
(C) $C^2N^{-2}m^{-2}$ (D) $Nm^{-2}C^2$
(E) None of these

4. *Two charges are located respectively at positions $\vec{r}_1 = 3.0\,\hat{j}$ and $\vec{r}_2 = 4.0\,\hat{i}$ w.r.t. certain reference point. The distance between the charges is:*
(A) Zero (B) $4\hat{i} + 3\hat{j}$
(C) $4\hat{i} - 3\hat{j}$ (D) $12\hat{k}$
(E) None of these

5. *Origin of the electric and the gravitational forces:*
(A) was known in 1911 A.D.
(B) was known in 1811 A.D.
(C) was known in 1711 A.D.
(D) is still unknown
(E) was known in 1611 A.D.

6. *The concept of electric field theory was introduced by:*
(A) Michael Faraday (B) Newton
(C) Dalton (D) Kepler
(E) Einstein

7. *Michael Faraday is known by his work on:*
(A) Nuclear strong force (B) Gravitational force
(C) Nuclear weak force (D) Electric force
(E) None of these

8. *There are two charges of 1μC and 5μC placed at certain distance. The ratio of the forces acting on each other will be:*
(A) 1 : 5 (B) 1 : 1
(C) 5 : 1 (D) 1 : 25
(E) None of these

9. *Electric field strength is defined as:*
(A) Work done on unit charge

(B) Force exerted on unit charge
(C) Distance covered by unit charge
(D) Power exerted by unit charge
(E) None of these

10. Electric intensity at a place due to a charged conductor is a:
(A) Scalar quantity
(B) Vector quantity
(C) Semi-vector and semi-scalar
(D) Dimensionless quantity
(E) Both (A) and (D) are true

11. The intensity at a point due to a charge is inversely proportional to:
(A) Amount of charge (B) Size of the charge
(C) Distance between charge and the point
(D) Square of the distance from the charge
(E) None of these

12. The SI unit of charge is:
(A) Ampere (B) Watt
(C) Coulomb (D) Volt
(E) Joule

13. The electric field lines start from:
(A) Positive charge (B) Negative charge
(C) Either (A) or (B) (D) Neutron
(E) An atom

14. Electric lines of force:
(A) Intersect each other (B) Are always parallel
(C) Are always anti-parallel (D) Never intersect
(E) None of these

15. If a field force of 1N acts on a test charge of 1 μC, then the strength of electric field at that point is:
(A) 1 N/C (B) 1 N/μC
(C) 10^7 N/C (D) 10^6 N/C
(E) Both (A) and (D)

Answers

1.	D	2.	B	3.	A	4.	C
5.	D	6.	A	7.	D	8.	B
9.	B	10.	B	11.	D	12.	A
13.	A	14.	D	15.	E		

CURRENT ELECTRICITY

1. Most practical applications of electricity involve
(A) Charges at rest (B) Charges in motion
(C) Electrons at rest (D) Atoms in motion
(E) Molecules in motion

2. The current that flows through the coil of a motor causes:
(A) Its shaft to revolve (B) Its brushes to rotate
(C) Motor to move (D) Its shaft to rotate
(E) None of these

3. SI unit of current describes the flow of charge at the rate of:
(A) One ampere per second
(B) One coulomb per second
(C) One electron per second
(D) 6.25×10^{18} electrons per second
(E) Both (B) and (D)

4. In case of metallic conductors, the charge carriers are:
(A) Protons (B) Electrons
(C) Antiprotons (D) Positrons
(E) Both (A) and (B)

5. The charge carriers in an electrolyte are:
(A) Positive ions (B) Negative ions
(C) Either (A) or (B) (D) Both (A) and (B)
(E) Neither (A) nor (B)

6. In gases, the charge carriers are:
(A) Electrons (B) Positive ions
(C) Negative ions (D) Both (A) and (C)
(E) Both (A) and (B)

7. The conventional current is the name given to current due to flow of:
(A) Positrons (B) Positive charges
(C) Negative charges (D) Both (A) and (C)
(E) None of these

8. A current of 1 ampere is passing through a conductor. The charge passing through it in half a minute is:
(A) One Coulomb (B) 0.5 Coulomb
(C) 30 Coulombs (D) 2 Coulombs
(E) None of these

9. The positive charge moving in one direction is equivalent in all external affects to a:
(A) Negative charge moving in the same direction
(B) Positive charge moving in the opposite direction
(C) Negative charge moving in the opposite direction
(D) Positive charge moving in the same direction
(E) None of these

10. In a metal, the valence electrons are:
(A) Attached to individual atoms
(B) Not attached to individual atoms
(C) Free to move within the metal

(D) Both (A) and (C)
(E) Both (B) and (C)

The free electrons in metals:

11. (A) Are in random motion and their speed depends upon temperature.
(B) Move in a particular direction.
(C) Move with speed of light
(D) Move such that their speed does not depend upon temperature.
(E) None of these

12. ***The rate at which the free electrons pass through any section of a metallic wire from right to left is:***
(A) Greater than the speed at which they pass from left to right
(B) Less than the speed at which they pass from left to right
(C) The same at which they pass from left to right
(D) Any of above
(E) None of these

13. ***If the ends of a wire are connected to a battery, an electric field E will be set up at:***
(A) The ends of the wire only
(B) Mid point of the wire only
(C) Every point within the wire
(D) At nodes only
(E) None of these

14. ***The magnitude of drift velocity is of the order of:***
(A) $10^{-6}\ ms^{-1}$ (B) $10^{-3}\ ms^{-1}$
(C) $10^{3}\ ms^{-1}$ (D) $10^{6}\ ms^{-1}$
(E) None of these

Answers

1.	B	2.	D	3.	E	4.	B
5.	D	6.	E	7.	B	8.	C
9.	B	10.	E	11.	A	12.	C
13.	C	14.	B				

ELECTROMAGNETISM

1. ***When some compass needles are placed on a card board along a circle with the centre at the wire, they will:***
(A) Point in the direction of N-S
(B) Set themselves tangential to the circle
(C) Point in the direction of E-W
(D) Point in the direction of S-E
(E) None of these

2. ***In the region surrounding a current carrying wire:***
(A) A magnetic field is set up
(B) The lines of force are elliptical
(C) Direction of lines of force depends upon direction of current
(D) Both (A) and (C)
(E) All of these

3. ***A current carrying conductor sets up its own:***
(A) Electric field (B) Nuclear field
(C) Magnetic field (D) All of these
(E) Both (A) and (C)

4. ***It is customary to represent a current flowing towards the reader by a symbol:***
(A) (•) (B) (+)
(C) (.) (D) (–)
(E) (÷)

5. ***The direction of force on a current carrying conductor placed in a magnetic field is that of:***
(A) Length of conductor (B) Magnetic field
(C) $\vec{L} \times \vec{B}$ (D) $\vec{L} \cdot \vec{B}$
(E) None of these

6. ***The pointer of a magnetic compass:***
(A) Is affected only by permanent magnets
(B) Aligns itself parallel to the applied magnetic field
(C) Vibrates in the magnetic field of the current
(D) Aligns itself perpendicular to the magnetic field
(E) Both (C) and (D)

7. ***Magnetic field is a:***
(A) Vector quantity (B) Scalar quantity
(C) Scalar as well as vector quantity (D) Neither (A) nor (B)
(E) Any of (A) or (B)

8. ***The direction of magnetic lines of force around a current carrying wire is given by:***
(A) Faraday's law (B) Head to tail rule
(C) Right hand rule (D) Both (A) and (B)
(E) None of these

9. ***If a copper rod carries a direct current, the magnetic field associated with the current will be:***
(A) Only inside the rod (B) Only outside the rod
(C) Both inside and outside the rod
(D) Neither inside nor outside the rod
(E) None of these

10. ***The force on a current carrying conductor length $\vec{L}$ placed in a magnetic field depends upon:***
(A) Angle between $\vec{L}$ and $\vec{B}$

(B) Current passing through the conductor
(C) Length and magnetic field
(D) Both (A) and (C) only
(E) All of these

11. *Magnetic lines of force:*
(A) Cannot intersect at all
(B) Intersect at infinity
(C) Intersect within magnet
(D) Intersect at neutral points
(E) None of these

12. *The strength of magnetic field around a straight conductor:*
(A) Is same every where around the conductor
(B) Obeys inverse square law
(C) Is directly proportional to the square of distance from the conductor
(D) All are true
(E) None of these

13. *A current is passed through a straight wire. The magnetic field established around it has its lines of force:*
(A) Circular and endless
(B) Oval in shape and endless
(C) Straight
(D) Parabolic
(E) All are true

14. *If current carrying conductor is placed perpendicular to the magnetic field, it will experience a force:*
(A) Zero
(B) ILB cos α
(C) ILB
(D) Both (A) and (B)
(E) Both (B) and (C)

15. *The direction of force experienced by a current carrying conductor placed in a magnetic field B is found by:*
(A) Dot product of L and B
(B) Cross product of L and B
(C) Right hand rule
(D) Both (B) and (C)
(E) Both (A) and (C)

16. *If $\vec{A}$ is vector area and $\vec{B}$ is the magnetic field, the magnetic flux is mathematically defined as:*
(A) $\vec{A} \cdot \vec{B}$
(B) $\vec{A} \times \vec{B}$
(C) $\vec{B} \cdot \vec{A}$
(D) Both (A) and (B)
(E) Both (A) and (C)

17. *Vector area $\vec{A}$ is a vector whose direction:*
(A) Is along the surface element
(B) Perpendicular to surface element
(C) At an angle 60° to the surface element
(D) Depends upon the direction of magnetic field
(E) None of these

18. *If the field is directed along the normal to the area, then flux is:*
(A) Maximum
(B) Equal to zero
(C) Equal to BA
(D) Minimum
(E) Both (A) and (C)

19. *The unit of magnetic induction $\vec{B}$ is:*
(A) Weber
(B) Weber m⁻²
(C) Newton/amp metre
(D) Newton/metre
(E) None of these

20. *Magnetic induction is defined as flux per unit area of the surface which is:*
(A) Parallel to $\vec{B}$
(B) Perpendicular to $\vec{B}$
(C) At an angle 60° to $\vec{B}$
(D) Any of A or B
(E) Both (A) and (C)

Answers

1.	A	2.	D	3.	E	4.	C
5.	C	6.	B	7.	A	8.	C
9.	C	10.	C	11.	A	12.	E
13.	A	14.	C	15.	D	16.	E
17.	B	18.	E	19.	B	20.	B

ELECTROMAGNETIC INDUCTION

1. *The current produced by moving a loop of wire across a magnetic field is called:*
(A) Direct current
(B) Magnetic current
(C) Alternating current
(D) Induced current
(E) None of these

2. *An emf is set up in a conductor when it:*
(A) Is kept in a magnetic field
(B) Is kept in an electric field
(C) Moves across a magnetic field
(D) Both (A) and (B)
(E) None of these

3. *An induced current can be produced by:*
(A) Constant magnetic field
(B) Changing magnetic field
(C) Varying electric field
(D) Constant electric field
(E) None of these

4. *The phenomenon of generation of induced emf is called:*
(A) Electrostatic induction
(B) Magnetic induction
(C) Electromagnetic induction
(D) Electric induction
(E) Both (A) and (D)

5. *The induced current in a conductor depends upon:*
(A) Resistance of the loop

(B) Speed with which the conductor moves
(C) Any of these
(D) Both (A) and (B)
(E) None of these

6. *The induced current in the loop can be increased by:*
(A) Using a stronger magnetic field
(B) Moving the loop faster
(C) Replacing the loop by a coil of many turns
(D) All above
(E) Both (A) and (B)

7. *In magnet-coil experiment, emf can be produced by:*
(A) Keeping the coil stationary and moving the magnet
(B) Keeping the magnet stationary and moving the coil
(C) Relative motion of the loop and magnet
(D) Any one of above
(E) All above

8. *Michael Faraday and Joseph Henry belong respectively to:*
(A) USA and England (B) England and France
(C) England and USA (D) USA and France
(E) None of these

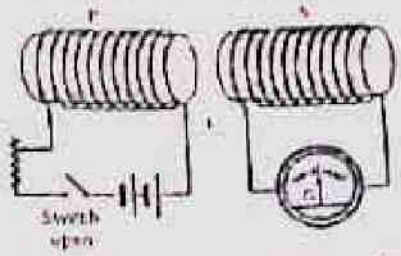
9. *The magnitude of induced emf depends upon the*
(A) Rate of decrease of magnetic field
(B) Rate of change of magnetic field
(C) Rate of increase of magnetic flux
(D) Constancy of magnetic field
(E) None of these

10. *When there is no relative motion between the magnet and coil, the galvanometer indicates:*
(A) No current in the circuit
(B) An increasing current
(C) A decreasing current
(D) A constant current
(E) Either (B) or (C)

11. *Instead of moving the coil towards a magnet, the magnet is moved towards the coil with the same speed. The galvanometer shows current:*
(A) Of same magnitude in the same direction
(B) Of different magnitude in the same direction
(C) Of same magnitude but in opposite direction
(D) Of different magnitude in the opposite direction
(E) None of these

12. *A coil of constant area is placed in a constant magnetic field. An induced current is produced in the coil when:*
(A) The coil is distorted (B) The Coil is Rotated
(C) The coil is neither distorted nor rotated
(D) Both (A) and (B) (E) None of these

13. *Consider the circuit shown in Fig. If the switch of the coil P is suddenly closed:*



(A) A momentary current is induced in the coil S
(B) Galvanometer needle suddenly deflects but do not return to zero.
(C) Galvanometer needle suddenly deflects and returns to zero.
(D) Both (A) and (C)
(E) Galvanometer needle remains unaffected.

14. *Referring to above figure, current in the coil P grows from zero to its maximum value:*
(A) At the instant the switch is closed
(B) At the instant the switch is opened
(C) When switch is kept open
(D) All of above
(E) Neither of above

15. *Referring to above figure, current in coil P falls from its maximum value to zero:*
(A) At the instant the switch is closed
(B) At the instant the switch is opened
(C) When switch is kept open
(D) When switch is kept closed
(E) None of these

16. *Referring to above figure, due to change in current in the coil P, the change in magnetic flux:*
(A) Is associated with coil P
(B) Is associated with coil S
(C) Causes an induced current in coil S
(D) All of these
(E) None of these

17. *Referring to above figure, a changing current in coil P can be produced:*
(A) At the instant the switch is closed
(B) At the instant the switch is opened
(C) With the help of rheostat
(D) All of these
(E) None of these

18. *In order that no emf should be induced in a flat loop of wire placed in a changing magnetic field, the angle between $\vec{B}$ and*

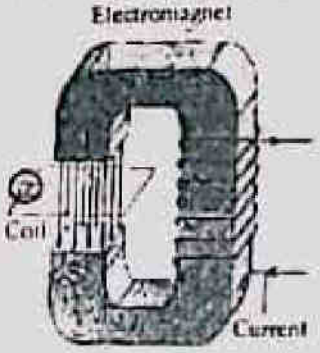
$\overline{\Delta A}$ should be:

(A) 0° (B) 45°
(C) 90° (D) 135°
(E) 180°

19. The unit of induced emf is:

(A) Volt (B) Nm/As
(C) Joule coul^{-1} (D) Both (A) and (C)
(E) All of these

20. Consider the Fig. where the coil is placed in the magnetic field of an electromagnet. The magnetic flux through the coil is changed by:



(A) Keeping both the coil and the electromagnet stationary
(B) By passing a constant current through the electromagnet
(C) By changing the current passing through the electromagnet
(D) Both (A) and (B)
(E) Both (A) and (C)

Answers

1.	D	2.	C	3.	B	4.	C
5.	D	6.	D	7.	E	8.	C
9.	B	10.	A	11.	C	12.	D
13.	D	14.	A	15.	B	16.	D
17.	D	18.	C	19.	E	20.	C

ALTERNATING CURRENT

1. Alternating current can be transmitted:

(A) To long distance (B) At very high cost
(C) At very low cost (D) Both (A) and (C)
(E) Both (A) and (B)

2. Alternating current is produced by a voltage source which polarity:

(A) Remains the same (B) Reverses after period T
(C) Keeps on reversing with time
(D) Reverses after every time interval T/2
(E) Both (C) and (D)

3. Nowadays, most of the electrical energy is produced by A.C. generators using:

(A) Hydal water (B) Geothermal energy
(C) Solar energy (D) Biomass
(E) Both (B) and (D)

4. The time interval during which the voltage source changes its polarity once is known as:

(A) Time period T (B) Half the time period
(C) Quarter the time period
(D) Two third of the time period (E) None of these

5. The most common source of alternating voltage is:

(A) Motor (B) Transformer
(C) AC generator (D) Both (A) and (C)
(E) Both (A) and (B)

6. The output V of an A.C. generator at any instant is given by:

(A) $V = V_0 \sin \omega t$ (B) $V = V_0 \sin \frac{2\pi}{t}$
(C) $V = V_0 \sin \frac{2\pi}{T} t$ (D) Both (A) and (C)
(E) Both (A) and (B)

7. Using $\theta = \omega t$ and $\omega = \frac{2\pi}{T}$, the angle through which the coil of A.C. generator rotates, when $t = \frac{T}{2}$ is:

(A) zero (B) $\pi/2$
(C) π (D) $3\pi/2$
(E) 2π

8. Using $V = V_0 \sin \omega t$ and $\omega = 2\pi/T$, the value of alternating voltage V when $t = 3T/4$ is:

(A) V_0 (B) $-V_0$
(C) $V = 0$ (D) Both (A) and (B)
(E) Both (A) and (C)

9. The wave form of alternating voltage is the graph between:

(A) Voltage along x-axis and time along y-axis
(B) Current and time
(C) Voltage along y-axis and time along x-axis
(D) Voltage and current
(E) Either (B) or (D)

10. The waveform of alternating voltage is a:

(A) Square (B) Rectangular
(C) Saw-tooth (D) Sinusoidal
(E) None of these

11. The instantaneous value of voltage or current can have any value between:

(A) Positive maximum value + V_o and negative maximum value $-V_o$
(B) Positive maximum value $+V_o$ and zero
(C) Zero and negative maximum value $-V_o$
(D) Any of these
(E) None of these

12. *The entire waveform of sinusoidal voltage is actually a set of all the:*
(A) Average values which exist during a period T/2
(B) Instantaneous values which exist during a period T
(C) Peak-to-peak values
(D) RMS values
(E) None of these

13. *RMS value of voltage is:*
(A) $\frac{V_o}{\sqrt{2}}$ (B) $\frac{V_o}{2}$
(C) $1.41\ V_o$ (D) $0.5\ V_o^2$
(E) Either (B) or (D)

14. *The highest value reached by the voltage or current*
(A) In quarter cycle is called instantaneous value
(B) In half cycle is called peak-to-peak value
(C) In one cycle is called peak value
(D) In half cycle is called instantaneous value
(E) None of these

15. *The sum of positive and negative peak values (i.e., p-p value) is called:*
(A) Instantaneous value (B) Peak value
(C) RMS value (D) Peak-to-peak value
(E) None of these

16. *The peak-to-peak value of alternating voltage is:*
(A) $2V_o$ (B) V_o
(C) $\frac{V_o}{2}$ (D) $4V_o$
(E) None of these

17. *The average value of alternating voltage over a complete cycle is:*
(A) $0.7\ V_{max}$ (B) Zero
(C) $0.707\ V_{max}$ (D) $1.414\ V_{max}$
(E) Either (A) or (C)

18. *Peak value of alternating current is:*
(A) One of its instantaneous values
(B) Equal to its RMS value
(C) The same as its peak-to-peak value
(D) Both (B) and (C)
(E) None of these

19. *The instantaneous value of alternating current may be:*
(A) The same as its RMS value
(B) Greater than its RMS value
(C) The same as its peak value
(D) Any of these
(E) None of these

20. *The RMS value of alternating voltage is:*
(A) 0.7 times the peak value
(B) 0.5 times the peak value
(C) 0.7 times the instantaneous value
(D) Equal to maximum voltage
(E) None of these

Answers

1.	D	2.	E	3.	A	4.	A
5.	C	6.	D	7.	C	8.	B
9.	C	10.	D	11.	A	12.	B
13.	A	14.	C	15.	D	16.	A
17.	B	18.	A	19.	C	20.	A

PHYSICS OF SOLIDS

1. *Crystalline solids are in the form of:*
(A) Metals (B) Ionic Compounds
(C) Ceramics (D) Both (A) and (B)
(E) All of these

2. *The solids are classified as:*
(A) Metals (B) Crystalline
(C) Amorphous (D) Polymeric
(E) All except A

3. *Zirconia is classified as:*
(A) Ceramic solid (B) Ionic Compound
(C) Metal (D) Either (A) or (B)
(E) Either (B) or (C)

4. *Each atom in a metal crystal vibrates about a fixed point with an amplitude that:*
(A) Decreases with rise in temperature
(B) Is not affected by rise in temperature
(C) Increases with rise in temperature
(D) Both (B) and (C)
(E) None of these

5. *The transition from solid to liquid is actually from:*
(A) Order to disorder (B) Disorder to order
(C) Order to order (D) Disorder to disorder
(E) None of these

6. *The transition from solid state to liquid state is:*
(A) Abrupt (B) Slow
(C) Continuous (D) Discontinuous
(E) Both (A) and (D)

7. *The force which maintains the strict long*

range order between atoms of a crystalline solid is the:
(A) Nuclear force (B) Cohesive force
(C) Adhesive force (D) Coulomb force
(E) None of these

8. The word amorphous means:
(A) Without any structure (B) With Definite Structure
(C) Regular arrangement of molecules (D) Both (B) and (C)
(E) None of these

9. Amorphous solids:
(A) Have definite melting point
(B) Are called glassy solids
(C) Have no definite melting point
(D) Both (B) and (C)
(E) Both (A) and (C)

10. An ordinary glass gradually softens into a 'paste-like' state before it becomes a very viscous liquid. It happens almost at:
(A) 800°C (B) 500°C
(C) 300°C (D) 100°C
(E) None of these

11. The pattern of a crystalline solid is:
(A) One dimensional (B) Two dimensional
(C) Three dimensional (D) Either (A) or (B)
(E) None of these

12. In a cubic crystal, all the sides meet at:
(A) 60° (B) 90°
(C) 109° (D) 30°
(E) 10°

13. The arrangement of molecules or atoms in a crystalline solid can be studied by using:
(A) Chemical methods (B) Neutrons
(C) X-ray techniques (D) Copper atoms
(E) Both (A) and (B)

14. A unit cell is the smallest basic structure which is:
(A) One dimensional (B) Two dimensional
(C) Three dimensional (D) Four dimensional
(E) None of these

15. Tick the one which is not a crystalline solid:
(A) Zirconia (B) Glass
(C) Copper (D) Ceramic solid
(E) An ionic compound

16. The temperature at which the vibrations become so great that structure of the crystal breaks up, is called:
(A) Critical temperature (B) Temperature of vaporization
(C) Melting point (D) Both (A) and (C)
(E) Both (A) and (B)

17. The whole structure obtained by the repetition of unit cells is called:
(A) Crystal lattice (B) Amorphous solid
(C) Polymeric solid (D) Polystrene
(E) None of these

18. The pattern of NaCl particles have a shape which is:
(A) Cubic (B) Body centred cubic
(C) Simple cubic (D) Face centred
(E) Both (A) and (C)

19. In crystalline solids, atoms are held about their equilibrium positions depending upon the strength of:
(A) Adhesive forces (B) Nuclear forces
(C) Inter atomic cohesive force (D) Electromagnetic force
(E) None of these

20. The smallest three dimensional basic structure is called:
(A) An atom (B) Unit cell
(C) Crystal lattice (D) Polymer
(E) None of these

Answers

1.	E	2.	E	3.	A	4.	C
5.	A	6.	E	7.	B	8.	D
9.	C	10.	A	11.	C	12.	B
13.	C	14.	C	15.	B	16.	C
17.	A	18.	E	19.	C	20.	B

ELECTRONICS

1. Computer chips are made from:
(A) Iron (B) Silicon
(C) Helium (D) Strontium
(E) Aluminium

2. Silicon is one of the most commonly used:
(A) Conductor (B) Dielectric
(C) Insulator (D) Semiconductor
(E) Both (B) and (C)

3. The huge advances in electronics over the recent past are due to discovery and use of:
(A) Conductors (B) Insulators
(C) Semiconductors (D) Iron
(E) Heavy water

4. The use of chips in electrons is described in the form of:
(A) Yellow boxes (B) Black boxes

(C) Red boxes (D) White boxes
(E) Orange boxes

5. *Crystal of germanium or silicon in its pure form at absolute zero acts as:*
(A) A conductor (B) A semiconductor
(C) An insulator (D) Both (A) and (C)
(E) Both (A) and (B)

6. *At room temperature, crystal of germanium, in its pure form, act as:*
(A) A conductor (B) A semiconductor
(C) An insulator (D) Both (A) and (C)
(E) None of these

7. *Atomic number of germanium atom and number of valence electrons in it are respectively:*
(A) 32, 4 (B) 4, 32
(C) 14, 4 (D) 22, 3
(E) 4, 14

8. *All the valence electrons present in a crystal of silicon are bound in their orbits by:*
(A) Ironic bond (B) Covalent bond
(C) Molecular bond (D) Both (A) and (B)
(E) Both (B) and (C)

9. *An outer most orbit represents stable configuration if it possesses:*
(A) 4 electrons (B) 8 electrons
(C) 12 electrons (D) 16 electrons
(E) No electron

10. *A p-type crystal is:*
(A) Neutral as a whole (B) Impurity added crystal
(C) Pure crystal (D) Both (A) and (B)
(E) Positively charged

11. *Majority charge carriers in the p-region of p-n junction are:*
(A) Electrons (B) Positrons
(C) Holes (D) Neutrons
(E) None of these

12. *Whenever a covalent bond breaks, it creates:*
(A) An electron (B) A hole
(C) An electron-hole pair (D) A positron
(E) All of these

13. *The impurity in the germanium is usually in the ratio of:*
(A) $1 : 10^4$ (B) $1 : 10^8$
(C) $1 : 10^{12}$ (D) $1 : 10^{16}$
(E) None of these

14. *When phosphorus is added as an impurity in germanium, there is an increase in:*
(A) Free electrons in Ge (B) Holes in Ge
(C) Positrons in Ge (D) Both (A) and (B)
(E) Both (B) and (C)

15. *A hole in p-type may be due to:*
(A) Trivalent impurity (B) Breaking of some covalent bond
(C) Pentavalent impurity (D) Germanium
(E) Either (A) or (B)

ANSWERS

1.	B	2.	D	3.	C	4.	B
5.	C	6.	B	7.	A	8.	B
9.	B	10.	A	11.	C	12.	C
13.	B	14.	A	15.	E		

DAWN OF MODERN PHYSICS

1. *The concept of direction is purely:*
(A) Absolute (B) Relative
(C) Relative to stars always (D) Relative to the sun always
(E) None of these

2. *All motions are:*
(A) Relative to a person (B) Relative to the instrument observing it
(C) Absolute (D) Both (A) and (B)
(E) None of these

3. *A body at rest remains at rest unless:*
(A) A balanced force produces motion in it
(B) An unbalanced force produces acceleration in it
(C) An unbalanced force does not produce acceleration in it
(D) A balanced force produces acceleration in it
(E) None of these

4. *Strictly speaking, the earth is:*
(A) An accelerated frame of reference
(B) A non-inertial frame of reference
(C) An inertial frame of reference
(D) A non-accelerated frame of reference
(E) Both (A) and (B)

5. *The special theory of relatively treats the problems involving*
(A) Inertial frames of reference
(B) Non-inertial frames
(C) Non-accelerated frames
(D) Both (A) and (C)
(E) Both (B) and (C)

6. *The general theory of relativity treats the problems involving frames of reference which are:*
(A) Inertial
(B) Accelerating with respect to one another

(C) Accelerating with respect to a particular star
(D) Moving with uniform velocity
(E) None of these

7. *The special theory of relativity is based on:*
(A) Four postulates (B) Three postulates
(C) Two postulates (D) One postulate
(E) None of these

8. *There is no way to detect.*
(A) Absolute uniform motion (B) Accelerated motion
(C) State of rest (D) State of motion
(E) None of these

9. *Time:*
(A) Is an absolute quantity (B) Is relative
(C) Depends upon motion of frame of reference (D) All above
(E) None of these

10. *The symbol to be used in relativity problems denotes:*
(A) Dilated time (B) Proper time
(C) Life time (D) Half life
(E) None of these

11. *Practically the quantity $\frac{v}{c}$ is always:*
(A) Less than one (B) Equal to one
(C) Greater than one (D) All of these
(E) None of these

12. *Tick the correct statement:*
(A) l_o is always less than l (B) m_o is always greater than m
(C) l_o is always less than l (D) Both (A) and (C)
(E) Both (B) and (C)

13. *Due to relative motion of observer and the frame of reference of events, time always:*
(A) Dilates itself (B) Contracts itself
(C) Stretches itself (D) Both (A) and (C)
(E) None of these

14. *The dilation of time applies to the timing processes which are:*
(A) Physical (B) Chemical
(C) Biological (D) All of these
(E) None of these

15. *Aging process of the human body:*
(A) Becomes slow by motion at very high speed
(B) Becomes fast at very high speed
(C) Is not affected when its speed becomes extremely large
(D) All of these are true
(E) None is true

16. *As compared to the distance measured by an observer on Earth, the distance from Earth to a star measured by an observer in a moving spaceship would seem:*
(A) Smaller (B) Larger
(C) Same (D) Much larger
(E) None of these

17. *Mass of an object:*
(A) Is a varying quantity (B) Depends upon the speed of object
(C) Indicates its inertia (D) All above
(E) None of these

18. *Earth's orbital speed is:*
(A) 30 ms^{-1} (B) 30 kms^{-1}
(C) 3×10^4 ms^{-1} (D) Both (A) and (C)
(E) Both (B) and (C)

19. *Tick the correct relativistic equation/s:*
(A) $m_o = m\sqrt{1-\frac{v^2}{c^2}}$ (B) $l_o = l\sqrt{1-\frac{v^2}{c^2}}$
(C) $m = \frac{m_o}{\sqrt{1-\frac{v^2}{c^2}}}$ (D) All of these
(E) Both (B) & (C)

20. *The ratio of speed of light to the orbital speed of Earth is:*
(A) 10^4 (B) 10^3
(C) 10^2 (D) 10^5
(E) 10^5 kms^{-1}

ANSWERS

1.	B	2.	D	3.	B	4.	E
5.	D	6.	B	7.	C	8.	A
9.	D	10.	B	11.	A	12.	D
13.	D	14.	D	15.	A	16.	A
17.	D	18.	E	19.	D	20.	A

ATOMIC SPECTRA

1. *The first series which was identified in the spectrum of hydrogen is called:*
(A) Lyman series (B) Balmer series
(C) Paschen series (D) Bracket series
(E) Pfund series

2. *Balmer series was identified in:*
(A) 1685 (B) 1785
(C) 1885 (D) 1985
(E) 1585

3. *Atoms of hydrogen gas can be excited by passing electric current through it when the gas is filled into the discharge tube at a pressure which is:*

(A) Less than atmospheric pressure
(B) Much less than atmospheric pressure
(C) Greater than atmospheric pressure
(D) Much greater than atmospheric pressure
(E) Both (C) and (D)

Balmer series lies in that region of electromagnetic wave spectrum which is called:
(A) Visible region (B) Invisible region
(C) Infra-red region (D) Ultraviolet region
(E) None of these

The natural arrangement of colours in the spectrum of white light spectrum is:
(A) VIBGYOR (B) ROYBGIV
(C) ROYBIGV (D) BIGROYV
(E) None of these

The range of wavelengths of colours in the visible colours is:
(A) 410 nm to 456 nm (B) 10 nm to 56 nm
(C) 410 nm to 656 nm (D) 910 nm to 956 nm
(E) None of these

Tick the incorrect statement:
(A) $R_H = 1.097 \times 10^7\ m^{-1}$ (B) $h = 6.62 \times 10^{-34}$ Js
(C) $\lambda_{red} = 656$ nm (D) $\lambda_{violet} = 700$ nm
(E) $\lambda_{blue} = 434$ nm

The results of spectra obtained by Balmer were expressed in 1896 by:
(A) Bohr (B) Rydberg
(C) Planck (D) Rutherford
(E) Coulomb

The process of formation of spectrum is called
(A) Interference (B) Spectroscopy
(C) Dispersion (D) Reflection
(E) Both (A) and (D)

The value of Rydberg's constant is:
(A) $1.0974 \times 10^{-7}\ m^{-1}$ (B) $1.0974 \times 10^{7}\ m^{-1}$
(C) $1.0974 \times 10^{4}\ cm^{-1}$ (D) $1.0974 \times 10^{10}\ cm^{-1}$
(E) None of these

Spectrum represents the number of component colours present in certain light in terms of:
(A) Wavelength (B) Frequency
(C) Energy (D) Both (A) and (B)
(E) All of these

Tick the series which lies in the visible region:
(A) Lyman series (B) Balmer series
(C) Paschen series (D) Brackett series
(E) Pfund series

13. *Tick the series which lie/s in the infra-red region:*
(A) Pfund series (B) Brackett series
(C) Paschen series (D) All of these
(E) None of these

14. *The spectral series found in the infrared region is/are:*
(A) Paschen series (B) Brackett series
(C) Pfund series (D) Both (A) and (B)
(E) All of these

15. *Lyman series in the spectrum of hydrogen exists in the:*
(A) Infra-red region (B) Visible region
(C) Ultraviolet region (D) Both (A) and (B)
(E) None of these

ANSWERS

1.	B	2.	C	3.	B	4.	A
5.	A	6.	C	7.	D	8.	B
9.	B	10.	B	11.	E	12.	B
13.	D	14.	E	15.	C		

NUCLEAR PHYSICS

1. *Neutron was suggested to be in the nucleus by:*
(A) Rutherford in 1920 (B) Bohr in 1913
(C) Dirac in 1928 (D) Anderson in 1932
(E) None of these

2. *Neutron was discovered by:*
(A) Rutherford in 1920 (B) Chadwick in 1932
(C) Bohr in 1913 (D) Compton in 1927
(E) None of these

3. *The ratio of the radii of an atom and its nucleus is roughly equal to:*
(A) 10^5 cm (B) 10^5
(C) 10^5 m (D) 10^{-5} m
(E) 10^{-5} mm

4. *Nucleon means:*
(A) Only electrons (B) Only neutrons
(C) Only protons (D) Both (A) and (C)
(E) Both (B) and (C)

5. *Charge and mass of a proton are respectively:*
(A) zero, 1.673×10^{-27} kg (B) 1.673×10^{-27} coul, 1.6×10^{-19} kg
(C) 1.6×10^{-19} coul, 1.673×10^{-27} kg (D) 9.1×10^{-31} kg, 1.67×10^{-27} coul
(E) 1.67×10^{-19} coul, 1.6×10^{-19} kg

6. *Mass of neutron is exactly:*

(A) 1.675×10^{-27} kg (B) 9.1×10^{-31} kg
(C) 1.67×10^{-19} kg (D) 1.6×10^{-19} kg
(E) Either (C) or (D)

7. *In the unit of unified mass scale, the mass of an electron is:*
(A) 1.007276u (B) 1.008665u
(C) 0.00055u (D) 0.000055u
(E) None of these

8. *Unified mass scale means that atomic mass is expressed in:*
(A) Kg (B) Gram
(C) Atomic mass unit (D) u only
(E) Both (C) and (D)

9. *The figure 1.007276u shows the mass of an:*
(A) Atom (B) Positron
(C) Electron (D) Neutron
(E) Proton

10. *In a neutral atom, the number of protons are always:*
(A) Greater than number of neutrons
(B) Smaller than the number of protons
(C) Equal to the number of neutrons
(D) Equal to number of electrons
(E) Greater than number of electrons

11. *Nucleus of a hydrogen atom may contain:*
(A) One neutron only (B) Two protons and one neutron
(C) Two protons and two neutrons (D) Any of above
(E) One proton only

12. *Nucleus of a hydrogen atom may contain:*
(A) One proton only (B) One proton and one neutron
(C) One proton and two neutrons (D) Any of these
(E) None of these

13. *Tick the correct symbol:*
(A) ${}_{1}^{3}H$ (B) ${}_{2}^{3}He$
(C) ${}_{2}^{4}He$ (D) Both (A) and (C)
(E) Both (A) and (B)

14. *The particle which is 7000 times more massive than the electron is called:*
(A) Proton (B) γ-ray
(C) α-particle (D) Meson
(E) Neutron

15. *The ratio of number of protons and number of neutrons is:*
(A) Almost one in lighter elements
(B) Greater than one in heavy elements
(C) Smaller than one in heavy elements
(D) Both (A) and (C)
(E) Both (A) and (B)

16. *The nuclei of an element having the same atomic number but different mass number are called:*
(A) Isotopes (B) Isobars
(C) Isomers (D) Isotones
(E) Isothermal

17. *The ordinary hydrogen is:*
(A) Denoted by H (B) Called Protium
(C) Denoted by ${}_{1}^{1}H$ (D) Both (B) and (C)
(E) Both (A) and (B)

18. *Tritium has:*
(A) One electron, two neutrons and one proton
(B) One electron, one proton and one neutron
(C) One electron, two protons, one neutron
(D) Two electrons, one proton, one neutron
(E) None of these

19. *Deuterium and tritium are respectively the names of:*
(A) Nucleus and atom of hydrogen
(B) Atom and nucleus of helium
(C) Atom and nucleus of hydrogen
(D) Nuclei of hydrogen atom
(E) None of these

20. *The isotopes of hydrogen is/are:*
(A) Protium (B) Deuterium
(C) Tritium (D) Both (A) and (B)
(E) All of these

ANSWERS

1.	A	2.	B	3.	B	4.	E
5.	C	6.	A	7.	C	8.	E
9.	E	10.	D	11.	E	12.	D
13.	D	14.	C	15.	D	16.	B
17.	D	18.	A	19.	C	20.	E

(xvii) The kingdom Protista contains the following major groups of eukaryotic organisms except:
(a) Unicellular protozoans (b) Unicellular algae
(c) Zygomycotes (d) Oomycotes

FULLY SOLVED TEST NO. 2

Each question has four possible answers. Choose the correct answer and in circle it.

(i) Most of the producers are:
(a) Chemoautotrophs (b) Photoautotrophs
(c) Heterotrophs (d) Saprotrophs

(ii) Drosera Intermedia is an example of:
(a) Saprotroph (b) Symbiont
(c) Parasite (d) Insectivore

(iii) Breathing is also known as:
(a) Ventilation (b) Cellular respiration
(c) External respiration (d) Internal respiration

(iv) It has been estimated that out of total surface area provided by roots, _____ is provided by the root hairs.
(a) 50% (b) 60%
(c) 67% (d) 76%

(v) Element present in most abundance in human body is:
(a) Carbon (b) Oxygen
(c) Hydrogen (d) Silicon

(vi) Carbohydrates may combine with protein to form
(a) Peptidoglycan (b) Glycopeptides
(c) Glycoprotein (d) Glycolipids

(vii) Which of the following characters is not true about enzymes?
(a) Globular in shape (b) Non-specific
(c) Proteinous in nature (d) Highly reactive

(viii) Which of the following combinations includes three structures all of which are found in plant cells NOT in animal cells?
(a) Cellulose cell wall chloroplast, cell membrane.
(b) Cellulose cell wall, chloroplast, sap vacuole
(c) Cellulose cell wall, nucleus, cap vacuole
(d) Chloroplast, cell membrane, nucleus.

(ix) Which is NOT a disease of viruses?
(a) Polio (b) Anthrax
(c) Measles (d) Hepatitis

(x) Which of the following is not involved in motility?
(a) Pili (b) Flagella
(c) Cilia (d) Fimbriae

(xi) Which of the following are the characteristics of living organisms?
(a) Highly organized, complex entities
(b) Composed of one or more cells
(c) Can grow in size
(d) All of the above

(xii) Which of the following processes can be described in biochemical terms?
(a) Photosynthesis (b) Respiration
(c) Digestion (d) All of these

(xiii) If the co-factor is loosely attached to the protein part, it is known as:
(a) Coenzyme (b) Apoenzyme
(c) Holoenzyme (d) None of the above

(xiv) Micrographia was published by:
(a) Robert Hooke (b) Robert Brown
(c) T. Schwann (d) M. Schleiden

(xv) Carlous Linnaeus was:
(a) English (b) Swedish
(c) French (d) Italian

(xvi) Who called small creatures as 'Animalcules'?
(a) Robert Hooke (b) Robert Koch

(c) Anlone Van Leeuwenhock (d) Louis Pasteur

(xvii) Example of Apicomplexans is:
(a) Trypansoma (b) Plasmodium
(c) Stentor (d) Amoeba

FULLY SOLVED TEST NO. 3

Each question has four possible answers. Choose the correct answer and in circle it.

(i) Two or more populations of different species are called:
(a) Community (b) Ecological niche
(c) Species (d) Ecosystem

(ii) Glycoproteins are present mostly in
(a) Glandular secretion (b) Both (a) & (d)
(c) Tissue secretion (d) Cellular secretion

(iii) The building units of enzymes are:
(a) Fatty acids (b) Glycerol
(c) Nucleic acid (d) Amino acids

(iv) "All living beings originate from or consist of vesicles or cells." This was the first belief of:
(a) Robert Hooke (b) Jean Baptist de-Lamarck
(c) Robert Brown (d) Lorenz Oken

(v) Reshuffling of the heritable material can take place in viruses although they do not contain any structure equivalent to the:
(a) Nucleus (b) Cytoplasm
(c) Plasmid (d) Ribosomes

(vi) Division of cocci in random plane results in:
(a) Sareina (b) Tetrad
(c) Streptococcus (d) Staphylococcus

(vii) Example of actinopods is:
(a) Trypanosoma (b) Radiolarian
(c) Forams (d) Plasmodium

(viii) Saprobes are:
(a) Predators (b) Mutualists
(c) Saptrotrophs (d) Parasites

(x) Which of the following is a homosporous plant?
(a) Selaginella (b) Lycopodium
(C) Pinus (D) Rose

( ) The simplest animals belongs to sub kingdom:
(A) Parazoa (B) Porifera
(C) Melazoa (D) Eumelazoa

(i) Which of the following is not the characteristic of living organisms?
(a) Contain genetic programme of their characteristics.
(b) Cannot acquire and cannot use energy.
(c) Maintain a fairly constant internal environment.
(d) Produce offspring similar to themselves.

(i) Important organic compounds in living organisms are except:
(a) Carbohydrates (b) Proteins
(c) Lipids (d) Salts

(ii) Which of the followings represents the essential raw materials from which coenzymes are made?
(a) Hormones (b) Salts
(c) Proteins (d) Vitamins

(v) Robert Hooke prepared and studied thin section of:
(a) Epiderm (b) Cortex
(c) Cork (d) None of these

( ) C. Linnaeus published the names of plants in:
(a) 1753 (b) 1755
(c) 1757 (d) 1758

( ) Animalcules include:
(a) Bacteria (b) Protozoa
(c) Coelentrata (d) Both a and b

( ) The locomotion in plasmodium is by:

(a) Pseudopods (b) Flagella
(c) Cilia (d) None of the above

FULLY SOLVED TEST NO. 4

Each question has four possible answers. Choose the correct answer and in circle it.

(i) **Carotenoids are converted into:**
(a) Chlorophyll a (b) Chlorophyll b
(c) Light (d) Carotenes

(ii) **Example of symbiotic nutrition is:**
(a) Lichen (b) Mycorrhiza
(c) Cuscuta (d) Both a and (b)

(iii) **Cellular respiration is the process in which cell utilizes O_2 to produce:**
(a) Glucose (b) CO
(c) CO_2 (d) Proteins

(iv) **Solute potential and pressure potential are collectively called:**
(a) Osmotic potential (b) Water potential
(c) Osmotic pressure (d) Water pressure

(v) **A large regional community primarily determined by climate is called:**
(a) Ecosystem (b) Biome
(c) Ecological niche (d) All of the above

(vi) **The small portion of enzymes which is involved in catalytic activity is known as:**
(a) Catalytic activity (b) Substrate
(c) Active site (d) None of the above

(vii) **Amount of lipids in plasma membrane ranges from:**
(a) 20-40% (b) 60-80%
(c) 50% (d) 90%

(viii) **A plant virus usually consists of an outer coat of protein and an inner core of:**
(a) DNA (b) RNA
(c) Polysaccharide (d) Chitin

(ix) **Germ theory of diseases was formulated by:**
(a) Robert Hooke (b) Robert Brown
(c) Robert Koch (d) Louis Pasteur

(x) **Which of the following is a giant amoeba?**
(a) Entamoeba hystolitica (b) Codosiga enteris
(c) Pelomyxa palustris (d) Choanaflagellida

(xi) **The branch of biology which deals with the use of living organisms, systems or processes manufacturing and service industries is:**
(a) Microbiology (b) Ecology
(c) Parasitology (d) Biotechnology

(xii) **Inorganic substances in living organisms except:**
(a) CO_2 (b) H_2O
(c) Nucleic acids (d) Acids

(xiii) **Following metal ions are used by some enzymes as co-factors except:**
(a) Mg^2 (b) Zn^2
(c) Na^1 (d) Cu^2

(xiv) **Cork is a:**
(a) Dead animal material
(b) Dead plant material
(c) Living animal material
(d) Living plant material

(xv) **Botanist who devised Binomial nomenclature:**
(a) W. M Stampley (b) J. Lederberg
(c) C. Linnaeus (d) Beadle and Tatum

(xvi) **Animalcules were first observed in:**
(a) Distilled water (b) Rain water
(c) Irrigated water (d) Drinking water

(xvii) **Which of the following is the intestinal parasite?**
(a) Amoeba (b) Entamoeba
(c) Stentor (d) Forams

FULLY SOLVED TEST NO. 5

■ **Each question has four possible answers. Choose the correct answer and in circle it.**

(i) **Asexual reproduction is uncommon in:**
(a) Denteromylocota (b) Zygomycota
(c) Ascomycola (d) Basidiomycota

(ii) **Which of the following statement about bryophytes is NOT true?**
(a) Vascular tissues are absent in these plants
(b) Gametophytic generation is dominant
(c) All of them are homosporous
(d) None of the above

(iii) **Diploblastic organisms belong to the phylum:**
(a) Radiata (b) Bilateria
(c) Cnidaria (d) Porifera

(iv) **Porphyrin ring is made up of:**
(a) Phytol ring (b) Hydrophobic head
(c) Hydrocarbon chain (d) Pyroole rings

(v) **Deficiency of Potassium causes:**
(a) Chlorosis in old leaves (b) Lack of chlorophyll in young leaves
(c) Premature death of leaves (d) All of the above

(vi) **The energy is extracted and conserved from food molecules in biological useful way such as:**
(a) ADP (b) AMP
(c) ATP (d) Vitamins

(vii) **Carrier proteins are involved in:**
(a) Diffusion (b) Osmosis
(c) Facilitated diffusion (d) Active uptake

(viii) **Which of the following is a organelle?**
(a) Carbon dioxide (b) Heart
(c) Lysosome (d) DNA

(ix) **The protein regulating metabolic processes is:**
(a) Insulin (b) GRH
(c) Myosin (d) Both (a) and (b)

(x) **The non protein part of any enzyme is called**
(a) Both (b)and (d)
(b) Active site
(c) Co factor
(d) Binding site

(xi) **Which of the following deals with the physical and chemical parameters of the water bodies?**
(a) Microbiology (b) Freshwater biology
(c) Biotechnology (d) Parasitology

(xii) **Metabolic processes are characterized as:**
(a) Anabolism (b) Catabolism
(c) Both a and b (d) None of the above

(xiii) **The enzymes which are involved in the synthesis of Proteins are integral part of:**
(a) Ribosomes (b) Mitochondria
(c) Plastids (d) None of the above

(xiv) **According to Robert Hooke, Cell is an empty space bounded by:**
(a) Thick walls (b) Thin walls
(c) Mucilaginous walls (d) None of these

(xv) **The five kingdom system of classification was proposed by:**
(a) Robert whittaker (b) Margulis and Schwartz
(c) E. Chatton (d) Ernst Hackel

(xvi) **Presence of animalcules was confirmed in:**
(a) Saliva (b) Vinegar
(c) Infusions (d) All of the above

(xvii) **Which of the following causes Amoebic dysentery in humans?**
(a) Amoeba (b) Entamoeba
(c) Stentor (d) Forams

FULLY SOLVED TEST NO. 6

Each question has four possible answers. Choose the correct answer and in circle it.

(i) "Omnis cellula e cellula" is the wording of
(a) Louis Pasteur (b) Schwann and Schleiden
(c) Rudolph Virchow (d) Lorenz Oken

(ii) Which of the following characteristics of viruses is not like that of living things:
(a) Reproduction (b) Presence of DNA
(c) Presence of RNA (d) Crystal formation

(iii) Which of the following bacteria is a bacillus?
(a) Pneumococcus (b) Pseudomonas
(c) Vibno Cholerae (d) Hyphomicrobium

(iv) Organs of locomotion and capturing food in Paramecium are:
(a) Pili (b) Flagella
(c) Pseudopodia (d) Cilia

(v) Simple breaking of mycelium of some hypphal fungi is:
(a) Budding (b) Fragmentation
(c) Fertilization (d) None of the above

(vi) Plant belong to the class hepaticeae is :
(a) Funaria (b) Marchantia
(c) Polytrichum (d) Sphagnum

(vii) Members of phylum _____ have pseudocoelum.
(a) Platyhelminthes (b) Nematoda
(c) Echinodermata (d) Arthropoda

(viii) Unit of light is:
(a) Watt (b) Volt
(c) Photon (d) None of the above

(ix) Tusks of an elephant are:
(a) Canine (b) Incisors
(c) Molar (d) Additinn teeth

(x) Respiratory gases are exchanged between:
(a) Body fluids (b) Out side the body
(c) Lymphatic system (d) Cells and arteries

(xi) Which of the following deals with the structure of organisms, the cells and their organelles of molecular level?
(a) Microbiology (b) Freshwater Biology
(c) Molecular Biology (d) Social Biology

(xii) The basic element of organic compound is:
(a) Carbon (b) Hydrogen
(c) Nitrogen (d) Oxygen

(xiii) Which of the following enzymes is capable of destroying cell's internal structure?
(a) Renin (b) Pepsin
(c) Pepsinogen (d) Ptyalin

(xiv) No body can have life if its constituent parts are not cellular tissue was expressed by:
(a) Lorenz oken (b) J. Baptist de-lamark
(c) R. Brown (d) R. Hooke

(xv) The Botanical name of potato is:
(a) Solanum migrum (b) Solanum tuberosum
(c) Solanum Xanthocarpum (d) Solanum melangena

(xvi) Louis Pasteur developed the vaccines for the following diseases except:
(a) Anthrax (b) Ralies
(c) Tuberculosis (d) Fond cholera

(xvii) Which of the following is a complex specialized flagellate with many flagella?
(a) Trypanosoma (b) Euglena
(c) Trichonympha (d) None of the above

FULLY SOLVED TEST NO. 7

Each question has four possible answers. Choose the correct answer and in circ

(i) Cytoplasmic strands, which extend through pores in adjacent cell walls, are called:

(a) Plasmalemma (b) Plasmodesmata
(c) Middle Lamella (d) None of the above

(ii) **Coal forming age was dominated in:**
(a) Cenozoice era (b) Mesozoic era
(c) Plaeozoic era (d) Prolerozoic era

(iii) **Proteins comprises how much of the cell?**
(a) 60% (b) 50%
(c) 30% (d) 40%

(iv) **Which of the following behaves as "bridge" between enzymes & substrates?**
(a) Active site (b) Co factor
(c) Ions (d) Substrate site

(v) **Intake of large liquid particles inside the cell is called:**
(a) Facilitated transport (b) Exocytosis
(c) Phagocytosis (d) Pinocytosis

(vi) **When a bacteriophage attacks its bacterial host, it introduces into its body only the**
(a) Tail (b) Head
(c) Protein (d) DNA

(vii) **Kingdom prokaryotae includes:**
(a) Bactena and fungi (b) Bacteria and Blue green algae
(c) Blue green algae and fungi (d) Bacteria and viruses

(viii) **Of the following, which is also called shelled protozoan?**
(a) Ciliates (b) Zooflagellates
(c) Amoebas (d) Foraminifers

(ix) **Mildews and most rust species are:**
(a) Facultative parasites (b) Obligate parasites
(c) Both a and (b) (d) None of the above

(x) **Which of the following is NOT the difference between monocots and dicots?**
(a) Leaves of monocots are usually broad
(b) Leaves of dicots have netted veins
(c) Monocot stems do not show secondary growth
(d) Floral parts in monocots are 3 or multiple of (iii)

(xi) **Marine Biology includes:**
(a) Study of marine life
(b) Physical and chemical characteristics of the sea acting as factors for marine life
(c) Both a and b
(d) None of the above

(xii) **Which of the following percentages of water in bone cells of Human?**
(a) 10% (b) 15%
(c) 20% (d) 25%

(xiii) **Optimum pH value for pepsin is:**
(a) 1.05 (b) 1.07
(c) 1.08 (d) 2.00

(xiv) **The cell consisted of:**
(a) Nucleus (b) Cytoplasm
(c) Plasma membrane (d) All of the above

(xv) **The Botanical name of Tomato is:**
(a) Solanum tuberosum (b) Solanum nigrum
(c) Lycopersiam esculentum (d) Allium Cepa

(xvi) **Which of the following processes is the most significant contribution of Louis Pasteur?**
(a) Sterilization (b) Pasteurization
(c) Distillation (d) Filtration

xvii) **Which of the following lives as symbiont in the gut of termites and helps in the digestion of dry wood?**
(a) Trypanosoma (b) Trichonympha
(c) Euglena (d) Vorticella

FULLY SOLVED TEST NO. 8

Each question has four possible answers. Choose the correct answer and in circle it.

) **Members of which phylum secondarily developed radial symmetry?**

(a) Annelida (b) Mollusca
(c) Arthropoda (d) Echinodermata

(ii) Formula of chlorophyll b is:
(a) $C_{55}H_{72}O_5N_4Mg$ (b) $C_{55}H_{70}O_6N_4Mg$
(c) $C_{55}H_{70}O_6N_4Mg$ (d) $C_{54}H_{72}O_5N_4Mg$

(iii) Earthworm is a:
(a) Decomposer (b) Omnivore
(c) Detritivore (d) Saprotroph

(iv) Exchange of gases during organismic respiration is carried out only by:
(a) Osmosis (b) Diffusion
(c) Evaporation (d) Vaporization

(v) Xylem vessels are:
(a) Dead cells (b) Living cell
(c) Meristematic cells (d) Water storing cells

(vi) Treating cancer with medicines at regular intervals is called:
(a) Chemotherapy (b) Radiotherapy
(c) Genetherapy (d) Medicotherapy

(vii) Which of the following is correct as sample of terpenoids
(a) Rubber (b) Testosterone
(c) Carotenoids (d) All are correct

(viii) Which of the following characters is not true about co factor?
(a) It is a part of all enzymes.
(b) It is essential for some of chemical reactions
(c) They may be metallic ions.
(d) Both (a) and (b).

(ix) Carries proteins are required for all:
(a) Facilitated transport (b) Passive transport
(c) Active transport (d) All of the above

(x) Reproduction in viruses can takes place only when they are inside the body of
(a) Man (b) Bacterium
(c) Host (d) Other viruses

(xi) How many naturally occurring chemical elements are commonly used in forming the chemical compounds from which living organisms are made?
(a) 10 (b) 12
(c) 14 (d) 16

(xii) Which of the following percentage of water found in the brain cells of human?
(a) 75% (b) 80%
(c) 85% (d) 90%

(xiii) A slight change in pH can:
(a) Change the ionization of the amino acids.
(b) Affect the ionization of the substrates.
(c) Retard on the enzyme activity.
(d) All of the above

(xiv) The cell theory was proposed by:
(a) Louis Pasteur (b) Schwann and Schleiden
(c) Rudolph virchow (d) Lorenz oken

(xv) The Botanical name of Amaltas is:
(a) Cassia fistula (b) Solanum luberosum
(c) Lycopessicum esculentum (d) Allium cepa

(xvi) Microorganisms could cause disease was proved by:
(a) Robert Hooke (b) Robert Koch
(c) Louis Pasteur (d) Robert Brown

(xvii) Which of the following causes African sleeping sickness?
(a) Trypanosoma (b) Euglena
(c) Stentor (d) Vorticella

FULLY SOLVED TEST NO. 9

■ Each question has four possible answers. Choose the correct answer and in circl

(i) Highest growth in a bacterium may be attained by:

(a) Acanthurus nigrofuscus (b) Epulepiscium fishelsoni
(c) Escherilia coli (d) Bacillus subtilis

(ii) Huge algae, differentiated into blades, stipes and holdfast, are called:
(a) Kelp (b) Diatom
(c) Dinoflagellates (d) None of the above

(iii) A plant body which is not differential into root, stem and leaves is known as the:
(a) Mycelium (b) Thallus
(c) Hypha (d) Homogonium

(iv) Pteris is an example of:
(a) Angiosperm (b) Gymnosperm
(c) Ferus (d) Liver worts

(v) Which phylum includes animals without the body cavity or coelom i.e. they are acoelomate?
(a) Phylum Platyhelminthes (b) Phylum Cnidaria
(c) Phylum Nematoda (d) Phylum Chordata

(vi) A low concentration of _____ of in the leaf induces stomata to open even in the dark.
(a) Oxygen (b) Glucose
(c) Water (d) Carbon dioxide

(vii) Intracellular digestion can be observed in:
(a) Amoeba (b) Hydra
(c) Planaria (d) Cockroach

(viii) For gaseous exchange through membranes, _____ is better respiratory medium then water:
(a) Blood (b) Cytoplasm
(c) Air (d) Protoplasm

(ix) Cohesion tension theory was proposed by:
(a) Dixon (b) Munch
(c) Calvin (d) Kreb

(x) Removal or degradation of environmental pollutants or toxic materials by living organisms is called:
(a) Integrated disease management (b) Bioremediation
(c) Biodegration (d) All of the above

(xi) How many Bioelements accounts for 99% of the total mass in the human body?
(a) 2 (b) 4
(c) 6 (d) 8

(xii) The specific heat capacity of water is:
(a) 0.5 (b) 1.0
(c) 1.5 (d) 2.0

(xiii) Following are the inhibitors except:
(a) Cyanide (b) Antibiotics
(c) Antibodies (d) Malonic acid

(xiv) The scientist who supplied experimental proof for Rudolph virchow's hypothesis:
(a) Louis Pasteur (b) Robert Hooke
(c) Lorenz Oken (d) Robert Brown

(xv) Diatoms belong to the kingdom:
(a) Monera (b) Protists
(c) Fungi (d) Plantae

FULLY SOLVED TEST NO. 10

Each question has four possible answers. Choose the correct answer and in circl

(i) Polymer of repeating is sprenoid units:
(a) Phospholipids (b) Alanine
(c) Terpenoids (d) Waxes

(ii) If co factor is covalently bonded to enzyme, we call it:
(a) Co enzyme (b) Apo enzyme
(c) Holo enzyme (d) Prosthetic group

(iii) Fluid Mosaic Model explain the structure of:
(a) Nucleus (b) Cell wall
(c) Cell membrane (d) Cell

(iv) The fact that a virus can be transmitted from an infected organism to a healthy organism of kind was demonstrated in 1892 by:
(a) Beadle and Tatum (b) Ivanowsky

(c) Johann lederberg (d) W.M. Stanley

(v) Which of the following structure is NOT present in all the bacteria?
(a) Slime capsule (b) Cell wall
(c) Nucleoid (d) Ribosomes

(vi) The sexual process exhibited by most ciliates is called:
(a) Oogamy (b) Binary fission
(c) Conjugation (d) Fertilization

(vii) Sexual phase has not been observed in:
(a) Allemaria (b) Bracket fungi
(c) Yeasts (d) Rhizopus

(viii) Which characteristic is peculiar to Filicinae only?
(a) Compound leaves (b) Alternation of generation
(c) Photosynthetic (d) Circination

(ix) Dugesia is zoological name of :
(a) Sea anemone (b) Liver fluke
(c) Planaria (d) Jelly fish

(x) First action spectrum was obtained in Spirogyra by:
(a) T.W. Engelmann (b) Hegner
(c) Melvin Calvin (d) Stout

(xi) Highly structured living substance in a living thing is:
(a) Proloplasm (b) Chromoplasm
(c) Leucoplast (d) None of the above

(xii) The specific heat of vaporization of water is:
(a) 570 Kcal/kg (b) 574 Kcal/kg
(c) 578 Kcal/kg (d) 582 Kcal/kg

(xiii) Which of the following is not a characteristic of irreversible inhibitors?
(a) They occupy the active sites by forming covalent bonds
(b) They may physically block the active sites
(c) They form weak linkages with the enzymes
(d) They destroy the globular structure

(xiv) All presently living cells have a common origin because they have basic similarities in structure and molecules, etc., was the idea of:
(a) Louis Pasteur (b) August Weismann
(c) Robert Brown (d) Larenz Oken

(xv) Kingdom Protista includes the following except:
(a) Diatoms (b) Yeasts
(c) Cyanobacteria (d) Dinoflagellates

Answers

FULLY SOLVED TEST NO. 1

(i)	c	(ii)	b	(iii)	a	(iv)	b
(v)	c	(vi)	c	(vii)	c	(viii)	b
(ix)	a	(x)	d	(xi)	c	(xii)	b
(xiii)	b	(xiv)	a	(xv)	c	(xvi)	d
(xvii)	c						

FULLY SOLVED TEST NO. 2

(i)	b	(ii)	d	(iii)	a	(iv)	c
(v)	b	(vi)	c	(vii)	b	(viii)	b
(ix)	b	(x)	a	(xi)	d	(xii)	d
(xiii)	a	(xiv)	a	(xv)	b	(xvi)	c
(xvii)	b						

FULLY SOLVED TEST NO. 3

(i)	a	(ii)	d	(iii)	d	(iv)	d
(v)	a	(vi)	d	(vii)	b	(viii)	c
(ix)	b	(x)	a	(xi)	b	(xii)	d
(xiii)	d	(xiv)	c	(xv)	a	(xvi)	d
(xvii)	d						

FULLY SOLVED TEST NO. 4

(i)	b	(ii)	d	(iii)	c	(iv)	b
(v)	b	(vi)	c	(vii)	b	(viii)	b
(ix)	c	(x)	c	(xi)	d	(xii)	c
(xiii)	c	(xiv)	b	(xv)	c	(xvi)	b
(xvii)	b						

FULLY SOLVED TEST NO. 5

(i)	d	(ii)	d	(iii)	c	(iv)	d
(v)	c	(vi)	c	(vii)	c	(viii)	c
(ix)	d	(x)	c	(xi)	b	(xii)	c
(xiii)	a	(xiv)	a	(xv)	a	(xvi)	d
(xvii)	b						

FULLY SOLVED TEST NO. 6

(i)	c	(ii)	d	(iii)	b	(iv)	d
(v)	b	(vi)	b	(vii)	b	(viii)	c
(ix)	b	(x)	a	(xi)	c	(xii)	a
(xiii)	b	(xiv)	b	(xv)	b	(xvi)	c
(xvii)	c						

FULLY SOLVED TEST NO. 7

(i)	b	(ii)	c	(iii)	b	(iv)	a
(v)	d	(vi)	d	(vii)	b	(viii)	d
(ix)	b	(x)	a	(xi)	c	(xii)	c
(xiii)	d	(xiv)	d	(xv)	c	(xvi)	b
(xvii)	b						

FULLY SOLVED TEST NO. 8

(i)	d	(ii)	a	(iii)	c	(iv)	b
(v)	a	(vi)	a	(vii)	d	(viii)	c
(ix)	b	(x)	c	(xi)	d	(xii)	c
(xiii)	d	(xiv)	b	(xv)	a	(xvi)	c
(xvii)	a						

FULLY SOLVED TEST NO. 9

(i)	b	(ii)	a	(iii)	b	(iv)	c
(v)	a	(vi)	d	(vii)	a	(viii)	c
(ix)	a	(x)	b	(xi)	c	(xii)	b
(xiii)	c	(xiv)	a	(xv)	b		

FULLY SOLVED TEST NO. 10

(i)	c	(ii)	d	(iii)	c	(iv)	b
(v)	a	(vi)	c	(vii)	a	(viii)	d
(ix)	c	(x)	b	(xi)	a	(xii)	b
(xiii)	c	(xiv)	b	(xv)	c		

IDIOMS & PHRASES

It will not be wrong to say that idioms and phrases are the soul of a language. Students generally commit errors in the use of idioms and phrases because they do not know their exact meaning.

Objective Type (Multiple Choice) Questions

Directions. Given below are 300 objective type (multiple choice) questions on Idioms and Phrases. Choose the correct meanings of these idioms and phrases out of the four responses *a, b, c* and *d*.

1. *All and sundry:*
   (a) everybody without distinction (b) only rich person
   (c) together (d) selected people
2. *At arm's length:*
   (a) length of arm (b) at a distance
   (c) insult (d) very near
3. *At daggers drawn:*
   (a) real cause (b) to be puzzled
   (c) at enmity (d) at friendship
4. *Bag and baggage:*
   (a) all the clothing (b) without any belonging
   (c) leave (d) with all one's belongings
5. *Bed of roses:*
   (a) very soft bed (b) dull life
   (c) belong to (d) full of joys
6. *By leaps and bounds:*
   (a) very fast (b) very slow
   (c) in details (d) aimlessly
7. *In cold blood:*
   (a) in full operation (b) unintentionally
   (c) deliberately (d) to chase
8. *In the teeth of:*
   (a) real cause (b) in the face of
   (c) in the end (d) in the beginning
9. *Ins and outs:*
   (a) no details (b) finally
   (c) major share (d) full details
10. *Lion's share:*
    (a) look angrily (b) major share
    (c) minor share (d) heart of the prey
11. *Out of question:*
    (a) resemble (b) easy
    (c) impossible (d) for the end
12. *Up to the mark:*
    (a) feel greatly (b) standard
    (c) extinguish (d) below standard
13. *With open arms:*
    (a) warmly (b) cold-blooded
    (c) resemble (d) coldly
14. *A black sheep:*
    (a) stranger (b) on the run
    (c) scoundrel (d) gentleman
15. *A bone of contention:*
    (a) bone of a lion (b) a reason for discord
    (c) cause of friendship (d) continued to bed
16. *A cock and bull story:*
    (a) interesting story (b) a detective story
    (c) an absurd tale (d) a relevant story
17. *A gala day:*
    (a) a day of festivity (b) a day of grief
    (c) a rainy day (d) a relevant story
18. *A hard nut to crack:*
    (a) to be deceived (b) lazy
    (c) to confirm (d) a difficult problem
19. *A man of straw:*
    (a) a puppet (b) influential
    (c) one who has no influence (d) to struggle in vain
20. *A turncoat:*
    (a) one who changes one's opinion or party (b) a wet coat
    (c) a poor man (d) man of principles
21. *A fool's paradise:*
    (a) an underdeveloped country (b) Utopia
    (c) in a state of happiness founded on vain hopes (d) object to
22. *A white elephant:*
    (a) elephants of Kerala (b) a burdensome possession
    (c) in disguise (d) a snobbish person
23. *An axe to grind:*
    (a) touch life (b) an unselfish motive
    (c) selfish motive (d) win by any means
24. *Beat a retreat:*
    (a) to retire before the enemy (b) to face the enemy

(c) to object (d) feel greatly

25. *Be on the horns of a dilemma:*
(a) of the first quality (b) be very busy
(c) to have a choice between two equal evils (d) to choose between two goods

26. *At the eleventh hour:*
(a) in danger (b) just in time
(c) straightforward (d) before time

27. *In the arms of Morpheus:*
(a) sound asleep (b) waking
(c) reprimand (d) be submissive

28. *Call a spade a spade:*
(a) cordially (b) speak diplomatically
(c) to be outspoken (d) to speak very plainly

29. *By hook or crook:*
(a) by fair means (b) by fair or foul means
(c) for ever (d) straightforward

30. *Crocodile tears:*
(a) incidentally (b) take a firm stand
(c) insincere sorrow (d) more than enough

31. *Beat about the bush:*
(a) approach a subject slowly (b) sincerely
(c) to be ignored (d) make clear

32. *Born with a silver spoon:*
(a) born of poor family (b) to struggle in vain
(c) punish (d) born of wealthy parents

33. *Bid fair:*
(a) to be reluctant (b) take a firm stand
(c) show promise (d) with all energy

34. *Black and blue:*
(a) painting (b) severely
(c) together (d) intermix

35. *Blow hot and cold:*
(a) support and oppose at the (b) firm determination
(d) major share

n trumpet:
others (b) speak abusively
oneself (d) balanced

tand (b) to speak last
h (d) to speak first on a delicate matter

het:

(a) dig in the fields (b) hunt for treasure
(c) make peace (d) make war

39. *To give a piece of one's mind:*
(a) scold (b) praise
(c) abandon (d) discharge

40. *Capital punishment:*
(a) object to (b) death penalty
(c) release (d) balance

41. *A burning question:*
(a) a present (b) an old important issue
(c) a matter hotly discussed in public (d) life imprisonment

42. *A feather in one's cap:*
(a) something to be ashamed of (b) something to be proud of
(c) creditable success (d) keep silent

43. *Chicken-hearted:*
(a) cowardly (b) fearlessly
(c) festive occasion (d) sincerely

44. *Come off with flying colours:*
(a) compensate (b) take care of
(c) achieve creditable success (d) keep silent

45. *Cut a sorry figure:*
(a) to bat severely (b) make a poor show
(c) to venture (d) to discourage

46. *Eat one's words:*
(a) withdraw one's words (b) to continue on
(c) to persist (d) remain valid

47. *Eat a humble pie:*
(a) feel hungry (b) eat greedily
(c) to face humiliation (d) to face jubilation

48. *Get into hot water:*
(a) take bath (b) get into trouble
(c) without aim (d) a difficult problem

49. *Go to the dogs:*
(a) go to ruin (b) go to heaven
(c) be ashamed of (d) to resign

50. *Hand and glove:*
(a) pass time (b) on very intimate terms
(c) very beautiful (d) very reserved

51. *Hit below the belt:*
(a) to act unfairly (b) to act in fair manner
(c) to give up (d) to act bravely

52. *Leave no stone unturned:*
(a) to rest (b) to do everything that can be done

99.	B	100.	A
04.	D	105.	A
09.	B	110.	D
14.	A	115.	C
19.	D	120.	A
24.	C	125.	A
29.	A	130.	C
34.	C	135.	B
39.	D	140.	C

(c) to fight (d) to punish

53. *Make a clean breast of:*
(a) to blame others (b) to discourage
(c) to respect (d) to confess fully one's fault

54. *A hole and corner policy:*
(a) to finish (b) open policy
(c) secret, underhand policy (d) unreliable person

55. *A jaundiced eye:*
(a) a prejudiced person (b) offer gratitude
(c) an unbiased person (d) an intelligent

56. *At random:*
(a) beyond control (b) in a definite pattern
(c) at advantage (d) without aim or purpose

57. *Over head and ears:*
(a) very tall (b) unconcerned
(c) completely immersed (d) to quarrel

58. *Nip the evil in the bud:*
(a) to destroy an evil in its early stage (b) to fight
(c) to foster an evil (d) to agree with

59. *Of one's own accord:*
(a) give up fighting (b) willingly
(c) unwillingly (d) to take care of

60. *Part and parcel:*
(a) heavy package (b) useless party
(c) essential party (d) to compensate

61. *Play ducks and drakes with:*
(a) to save money (b) to be on the run
(c) to fight (d) to squander money

62. *Poke one's nose into:*
(a) to interfere (b) unconcerned
(c) to criticise (d) to continue

63. *Pros and cons:*
(a) to amuse (b) keep silent
(c) to deceive (d) reason for and against

64. *A queer fish:*
(a) a big catch (b) a strange person
(c) a respectable (d) a rich person

65. *Spick and span:*
(a) very hard-working (b) neat, smart and tidy
(c) to fancy others (d) untidy and dirty

66. *Scot-free:*
(a) unpunished (b) respected
(c) give up (d) continue on

67. *Red-letter day:*
(a) a day of great joy or importance (b) a miserable day
(c) ripe time (d) in perfect order

68. *Make hay while the sun shines:*
(a) to dance happily (b) to hurry
(c) take advantage of favourable condition (d) to destroy

69. *Pull the wool over one's eye:*
(a) to delay (b) to encourage
(c) to suppress (d) to deceive

70. *Rise to the occasion:*
(a) do habitually (b) to equal to an emergency
(c) to understand (d) to join others

71. *Turn over a new leaf:*
(a) to mend one's way (b) to be present
(c) to discard (d) to survive

72. *Too many irons in the fire:*
(a) big fire (b) too many engagements
(c) to relax (d) to amuse

73. *To the backbone:*
(a) very weak (b) very stingy
(c) thoroughly (d) to discourage

74. *True to one's salt:*
(a) be successful (b) unfaithful
(c) to understand (d) faithful to one's master

75. *A bolt from the blue:*
(a) gradual process (b) a sudden complete surprise
(c) to delay (d) a deliberate move

76. *A cat's paw:*
(a) to be used as a tool (b) to co-operate
(c) become reconciled (d) to understand

77. *A Herculean task:*
(a) arouse appetite (b) a very easy task
(c) to be successful (d) extremely difficult task

78. *A fish out of water:*
(a) a hoax (b) in a wrong place
(c) above par (d) properly placed

79. *Be at one's back and call:*
(a) Under one's absolute control (b) to get in to trouble
(c) to improve (d) to lay aside

80. *Burn one's fingers:*
(a) become (b) to hurry

reconciled
(c) to get into trouble (d) make it difficult for

81. *Burn the candles at both ends:*
(a) a wealthy person (b) a lazy person
(c) treat as important (d) use up too much energy

82. *To cut the Gordian knot:*
(a) to do an easy thing (b) to solve a difficulty
(c) ready made (d) to have no effect

83. *Face the music:*
(a) love music (b) to avoid
(c) face the consequence of one's action (d) to delay

84. *To let the cat out of the bag:*
(a) to get into trouble (b) to keep a secret
(c) have a fever (d) to reveal a secret

85. *Laugh up one's sleeve:*
(a) to amuse (b) to make others laugh
(c) to laugh secretly (d) to laugh in public

86. *Kick up a row:*
(a) make a great noise (b) meet by chance
(c) to pursue (d) noiselessly

87. *Hush money:*
(a) soft money (b) easy money
(c) money given as bribe (d) noiselessly

88. *Hit the nail on the head:*
(a) to make tidy (b) to do the right thing
(c) meet by chance (d) do wrong things

89. *Can't see the wood for the trees:*
(a) silly person (b) a fool
(c) unable to see the main point (d) to encourage

90. *Go the whole hog:*
(a) to rescue (b) to do thoroughly
(c) do part by part (d) to insult

91. *Take the bull by the horns:*
(a) to evade a difficulty (b) blush or grow pale
(c) grapple with difficulty (d) spoil with flattery

92. *Throw out of gear:*
(a) to replace (b) hinder, disturb
(c) to decide (d) take up tune

93. *To and fro:*
(a) back and forth (b) puzzled
(c) amazed (d) reprove

94. *Tall talk:*
(a) a familiar person (b) boastful talk
(c) a sweet song (d) interesting story

95. *To bell the cat:*
(a) to do an easy job (b) to be indifferent to
(c) to undertake a difficult job (d) to clarify

96. *To be under cloud:*
(a) puzzle (b) enjoy the favour
(c) talk thoughtlessly (d) to be under suspicion

97. *To cast a slur upon:*
(a) to discuss (b) assume responsibility
(c) to get rid of (d) to bring into disrepute

98. *Throw up the sponge:*
(a) to defy the enemy (b) to remove restrictions
(c) abandon the struggle (d) to be deeply moved by

99. *Throw dust into one's eye:*
(a) be serious (b) to mislead, deceive
(c) to clarify (d) become definite

100. *To give vent to:*
(a) to allow to flow forth (b) to prove a failure
(c) to amass wealth (d) to evade

101. *To eat humble pie:*
(a) to apologise or confess (b) to order
(c) to flatter (d) to get rid of

102. *To hang in the balance:*
(a) to guess right (b) to manage to live
(c) to be undecided (d) to withdraw

103. *To leave in the lurch:*
(a) to study (b) to leave in difficulties
(c) to lay aside (d) to face the difficulty

104. *To mince matters:*
(a) to gain distinction (b) to be undecided
(c) to talk thoughtlessly (d) not to speak plainly

105. *To pay the piper:*
(a) to bear the expenses of an undertaking (b) just right
(c) capsize (d) to reject

106. *To pay through the nose:*
(a) to ignore (b) to buy cheaply
(c) to pay much too high a price (d) gain courage

107. *To pay one back in one's own coin:*
(a) to resemble (b) behave naturally
(c) discover a way (d) to return tit for tat

108. *To pick holes:*
(a) to insult (b) to encourage
(c) to find fault with (d) to betray

109. *To play second fiddle:*
(a) to miss an opportunity (b) to take a subordinate position
(c) to take the highest position (d) get tangled with

110. *To put a spoke in one's wheel:*
(a) to encourage (b) act without restraint
(c) risk something (d) to obstruct one's progress

111. *To put one on one's mettle:*
(a) to put to test (b) get an idea
(c) overwhelm (d) resemble

112. *To pull one's leg:*
(a) to give up (b) take care of
(c) to befool (d) to know

113. *To play with fire:*
(a) grasp the truth (b) to handle something dangerous
(c) to ridicule (d) to flee away

114. *To poke fun at:*
(a) to ridicule (b) to sing
(c) to detect (d) to experience

115. *To reckon with:*
(a) take up time (b) make an inventory
(c) to deal with (d) submit to punishment

116. *To run short:*
(a) talk until one is tired at (b) apply to oneself
(c) to get rid of (d) to have or be too little

117. *To set at defiance:*
(a) upset or disturb (b) to defy
(c) remove restrictions (d) invent by thinking

118. *To take a fancy to:*
(a) to fall in a trap (b) refuse to see
(c) to become fond of (d) to consider the matters

119. *To throw cold water on:*
(a) talk frankly (b) to ambush
(c) to ignore (d) to discourage

120. *To turn tail:*
(a) to turn away (b) make less attractive
(c) to kill in the battle (d) to anticipate

121. *To win laurels:*
(a) grapple with difficulty (b) to win honour
(c) to deceive (d) be deeply moved by

122. *To worship the rising sun:*
(a) withdraw from a contest (b) assume responsibility
(c) succeed in fighting (d) to curry favour with new power

123. *On the spur of the moment:*
(a) at once (b) to get delayed
(c) give justice (d) practically

124. *Pour oil on the troubled waters:*
(a) to show contempt (b) secretly
(c) to calm down anger (d) to get rid

125. *Read between the lines:*
(a) to hit at the real meaning (b) to betray
(c) to overshadow (d) busy person

126. *Ride rough-shod:*
(a) to interfere (b) to fight
(c) to act high-handedly (d) to refuse to go

127. *Root and branch:*
(a) to collect (b) to set ablaze
(c) to take hint (d) completely

128. *Sum and substance:*
(a) renew (b) retaliate
(c) disregard (d) gist

129. *Sit on fence:*
(a) to remain neutral (b) to show contempt
(c) to enjoy the surroundings (d) to become fond of

130. *Sword of Damocles:*
(a) damage by war (b) heavy rainfall
(c) threatening danger (d) to submit

131. *Take up the gauntlet:*
(a) to subdue (b) to accept defeat
(c) to enter the pay (d) to accept a challenge

132. *Tooth and nail:*
(a) secretly (b) swiftly
(c) completely (d) with utmost effort

133. *Weather the storms:*
(a) tide over (b) to manage to