

NEET 2013 (KARNATAKA) — QUESTION PAPER

Max. Marks: 720

Questions: 180

Section A (MCQ) — 180 questions

Q.1 The pair of quantities having same dimensions is

[NEET 2013 (Karnataka)]

- (1) Impulse and Surface Tension
 (2) Angular momentum and Work
 (3) Work and Torque
 (4) Young's modulus and Energy

 Scan or tap for the
full solution

Q.2 The displacement 'x' (in meter) of a particle of mass 'm' (in kg) moving in one dimension under the action of a force, is related to time 't' (in sec) by $t = \sqrt{x} + 3$. The displacement of the particle when its velocity is zero, will be

[NEET 2013 (Karnataka)]

- (1) 4 m (2) 0 m (zero)
 (3) 6 m (4) 2 m

 Scan or tap for the
full solution

Q.3 Vectors $\vec{A}$, $\vec{B}$ and $\vec{C}$ are such that $\vec{A} \cdot \vec{B} = 0$ and $\vec{A} \cdot \vec{C} = 0$. Then the vector parallel to $\vec{A}$ is

[NEET 2013 (Karnataka)]

- (1) $\vec{A} \times \vec{B}$ (2) $\vec{B} + \vec{C}$ (3) $\vec{B} \times \vec{C}$ (4) $\vec{B}$ and $\vec{C}$

 Scan or tap for the
full solution

Q.4 A car is moving in a circular horizontal track of radius 10 m with a constant speed of 10 m/s. A bob is suspended from the roof of the car by a light wire of length 1.0 m. The angle made by the wire with the vertical is

[NEET 2013 (Karnataka)]

- (1) $\frac{\pi}{3}$ (2) $\frac{\pi}{6}$ (3) $\frac{\pi}{4}$ (4) 0°

 Scan or tap for the
full solution

Q.5 A person holding a rifle (mass of person and rifle together is 100 kg) stands on a smooth surface and fires 10 shots horizontally, in 5 s. Each bullet has a mass of 10 g with a muzzle velocity of 800 m s^{-1} . The final velocity acquired by the person and the average force exerted on the person are :

[NEET 2013 (Karnataka)]

- (1) -0.08 m s^{-1} , 16 N (2) -0.8 m s^{-1} , 16 N
 (3) -1.6 m s^{-1} , 16 N (4) -1.6 m s^{-1} , 8 N

 Scan or tap for the
full solution

Q.6 A particle with total energy E is moving in a potential energy region U(x). Motion of the particle is restricted to the region when

[NEET 2013 (Karnataka)]

- (1) $U(x) < E$ (2) $U(x) = 0$
 (3) $U(x) \leq E$ (4) $U(x) > E$

 Scan or tap for the
full solution

Q.7 One coolie takes 1 minute to raise a suitcase through a height of 2 m but the second coolie takes 30 s to raise the same suitcase to the same height. The powers of two coolies are in the ratio

[NEET 2013 (Karnataka)]

- (1) 1 : 3 (2) 2 : 1 (3) 3 : 1 (4) 1 : 2

 Scan or tap for the
full solution

Q.8 The ratio of radii of gyration of a circular ring and a circular disc, of the same mass and radius, about an axis passing through their centres and perpendicular to their planes are

[NEET 2013 (Karnataka)]

- (1) $1 : \sqrt{2}$ (2) 3 : 2 (3) 2 : 1 (4) $\sqrt{2} : 1$

 Scan or tap for the
full solution

Q.9 Two discs are rotating about their axes, normal to the discs and passing through the centres of the discs. Disc D_1 has 2 kg mass and 0.2 m radius and initial angular velocity of 50 rad s^{-1} . Disc D_2 has 4 kg mass, 0.1 m radius and initial angular velocity of 200 rad s^{-1} . The two discs are brought in contact face to face, with their axes of rotation coincident. The final angular velocity (in rad s^{-1}) of the system is

[NEET 2013 (Karnataka)]

- (1) 60 (2) 100 (3) 120 (4) 40

 Scan or tap for the
full solution

Q.10 The radius of a planet is twice the radius of earth. Both have almost equal average mass densities. V_p and V_E are escape velocities of the planet and the earth, respectively, then

[NEET 2013 (Karnataka)]

(1) $V_P = 1.5 V_E$

(2) $V_P = 2 V_E$

(3) $V_E = 3 V_P$

(4) $V_E = 1.5 V_P$

Scan or tap for the full solution



- Q.11** A particle of mass 'm' is kept at rest at a height $3R$ from the surface of earth, where 'R' is radius of earth and 'M' is mass of earth. The minimum speed with which it should be projected, so that it does not return back, is (g is acceleration due to gravity on the surface of earth)

[NEET 2013 (Karnataka)]

(1) $\left(\frac{GM}{2R}\right)^{1/2}$

(2) $\left(\frac{gR}{4}\right)^{1/2}$

(3) $\left(\frac{2g}{R}\right)^{1/2}$

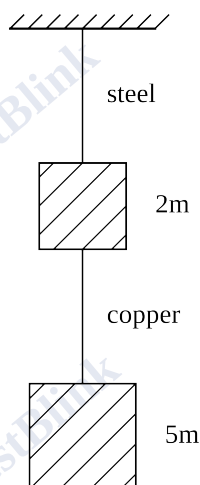
(4) $\left(\frac{GM}{R}\right)^{1/2}$

Scan or tap for the full solution



- Q.12** If the ratio of diameters, lengths and Young's modulus of steel and copper wires shown in the figure are p, q and s respectively, then the corresponding ratio of increase in their lengths would be

[NEET 2013 (Karnataka)]



(1) $\left(\frac{5q}{7sp^2}\right)$

(2) $\left(\frac{7q}{5sp^2}\right)$

(3) $\left(\frac{2q}{5sp}\right)$

(4) $\left(\frac{7q}{5sp}\right)$

Scan or tap for the full solution



- Q.13** Two metal rods 1 and 2 of same lengths have same temperature difference between their ends. Their thermal conductivities are K_1 and K_2 and cross sectional areas A_1 and A_2 , respectively. If the rate of heat conduction in 1 is four times that in 2, then

[NEET 2013 (Karnataka)]

(1) $K_1 A_1 = 4K_2 A_2$

(2) $K_1 A_1 = 2K_2 A_2$

(3) $4K_1 A_1 = K_2 A_2$

(4) $K_1 A_1 = K_2 A_2$

Scan or tap for the full solution



- Q.14** A fluid is in streamline flow across a horizontal pipe of variable area of cross section. For this which of the following statements is correct?

[NEET 2013 (Karnataka)]

- (1) The velocity is maximum at the narrowest part of the pipe and pressure is maximum at the widest part of the pipe.
- (2) Velocity and pressure both are maximum at the narrowest part of the pipe.
- (3) Velocity and pressure both are maximum at the widest part of the pipe.
- (4) The velocity is minimum at the narrowest part of the pipe and the pressure is minimum at the widest part of the pipe.

Scan or tap for the full solution



- Q.15** The density of water at 20°C is 998 kg/m^3 and at 40°C is 992 kg/m^3 . The coefficient of volume expansion of water is

[NEET 2013 (Karnataka)]

(1) $3 \times 10^{-4}/^\circ\text{C}$

(2) $2 \times 10^{-4}/^\circ\text{C}$

(3) $6 \times 10^{-4}/^\circ\text{C}$

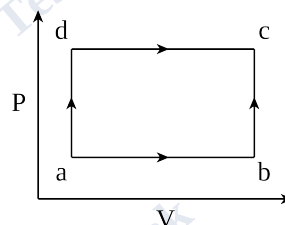
(4) $10 \times 10^{-4}/^\circ\text{C}$

Scan or tap for the full solution



- Q.16** A system is taken from state a to state c by two paths adc and abc as shown in the figure. The internal energy at a is $U_a = 10 \text{ J}$. Along the path adc the amount of heat absorbed $dQ_1 = 50 \text{ J}$ and the work obtained $dW_1 = 20 \text{ J}$ whereas along the path abc the heat absorbed $dQ_2 = 36 \text{ J}$. The amount of work along the path abc is

[NEET 2013 (Karnataka)]



(1) 10 J

(2) 12 J

(3) 36 J

(4) 6 J

Scan or tap for the full solution



- Q.17** Which of the following relations does not give the equation of an adiabatic process, where terms have their usual meaning?

[NEET 2013 (Karnataka)]

(1) $P^{1-\gamma} T^\gamma = \text{constant}$

(2) $PV^\gamma = \text{constant}$

(3) $TV^{\gamma-1} = \text{constant}$

(4) $P^\gamma T^{1-\gamma} = \text{constant}$

Scan or tap for the full solution



Q.18 Two Carnot engines A and B are operated in series. The engine A receives heat from the source at temperature T_1 and rejects the heat to the sink at temperature T . The second engine B receives the heat at temperature T and rejects to its sink at temperature T_2 . For what values of T the efficiencies of the two engines are equal

[NEET 2013 (Karnataka)]

- (1) $\frac{T_1 - T_2}{2}$ (2) $T_1 T_2$
 (3) $\sqrt{T_1 T_2}$ (4) $\frac{T_1 + T_2}{2}$

Scan or tap for the full solution



Q.19 In a vessel, the gas is at pressure P . If the mass of all the molecules is halved and their speed is doubled, then the resultant pressure will be

[NEET 2013 (Karnataka)]

- (1) $2P$ (2) P (3) $P/2$ (4) $4P$

Scan or tap for the full solution



Q.20 A particle of mass m oscillates along x -axis according to equation $x = a \sin \omega t$. The nature of the graph between momentum and displacement of the particle is

[NEET 2013 (Karnataka)]

- (1) Circle
 (2) Hyperbola
 (3) Ellipse
 (4) Straight line passing through origin

Scan or tap for the full solution



Q.21 The length of the wire between two ends of a sonometer is 100 cm. What should be the positions of two bridges below the wire so that the three segments of the wire have their fundamental frequencies in the ratio 1 : 3 : 5.

[NEET 2013 (Karnataka)]

- (1) $\frac{1500}{23}$ cm, $\frac{500}{23}$ cm (2) $\frac{1500}{23}$ cm, $\frac{300}{23}$ cm
 (3) $\frac{300}{23}$ cm, $\frac{1500}{23}$ cm (4) $\frac{1500}{23}$ cm, $\frac{2000}{23}$ cm

Scan or tap for the full solution



Q.22 An electric dipole of dipole moment p is aligned parallel to a uniform electric field E . The energy required to rotate the dipole by 90° is

[NEET 2013 (Karnataka)]

- (1) $p^2 E$ (2) pE (3) infinity (4) pE^2

Scan or tap for the full solution



Q.23 A charge q is placed at the centre of the line joining two equal charges Q . The system of the three charges will be in equilibrium if q is equal to

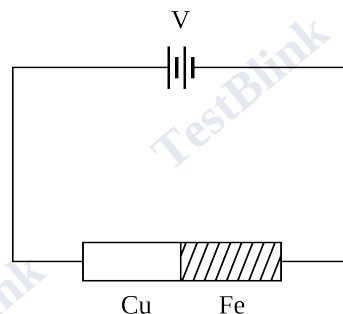
[NEET 2013 (Karnataka)]

- (1) $-Q/4$ (2) $Q/4$ (3) $-Q/2$ (4) $Q/2$

Scan or tap for the full solution



Q.24 Two rods are joined end to end, as shown. Both have a cross-sectional area of 0.01 cm^2 . Each is 1 meter long. One rod is of copper with a resistivity of $1.7 \times 10^{-6} \text{ ohm-centimeter}$, the other is of iron with a resistivity of $10^{-5} \text{ ohm-centimeter}$.



How much voltage is required to produce a current of 1 ampere in the rods?

[NEET 2013 (Karnataka)]

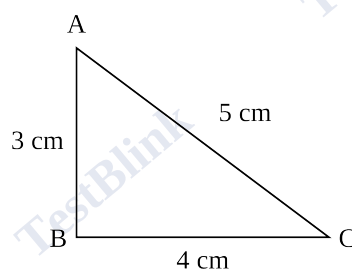
- (1) 0.00145 V (2) 0.0145 V
 (3) $1.7 \times 10^{-6} \text{ V}$ (4) 0.117 V

Scan or tap for the full solution



Q.25 A 12 cm wire is given a shape of a right angled triangle ABC having sides 3 cm, 4 cm and 5 cm as shown in the figure. The resistance between two ends (AB, BC, CA) of the respective sides are measured one by one. Their ratio is

[NEET 2013 (Karnataka)]



- (1) 9 : 16 : 25 (2) 27 : 32 : 35
 (3) 21 : 24 : 25 (4) 3 : 4 : 5

Scan or tap for the full solution



Q.26 Ten identical cells connected in series are needed to heat a wire of length one meter and radius ' r ' by 10°C in time ' t '. How many cells will be required to heat the wire of length two meter of the same radius by the same temperature in time ' t '?

[NEET 2013 (Karnataka)]

- (1) 20 (2) 30 (3) 40 (4) 10

Scan or tap for the full solution



Q.27 A long straight wire carries a certain current and produces a magnetic field $2 \times 10^{-4} \text{ Wb m}^{-2}$ at a perpendicular distance of 5 cm from the wire. An electron situated at 5 cm from the wire moves with a velocity 10^7 m/s towards the wire along perpendicular to it. The force experienced by the electron will be (charge on electron $1.6 \times 10^{-19} \text{ C}$)

[NEET 2013 (Karnataka)]

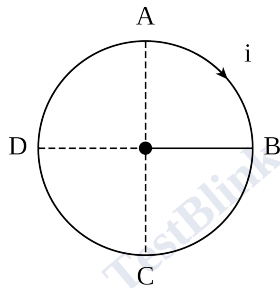
- (1) 3.2 N (2) $3.2 \times 10^{-16} \text{ N}$
(3) $1.6 \times 10^{-16} \text{ N}$ (4) zero

Scan or tap for the full solution



Q.28 A circular coil ABCD carrying a current 'i' is placed in a uniform magnetic field. If the magnetic force on the segment AB is $\vec{F}$, the force on the remaining segment BCDA is

[NEET 2013 (Karnataka)]



- (1) $-\vec{F}$ (2) $3\vec{F}$ (3) $-3\vec{F}$ (4) $\vec{F}$

Scan or tap for the full solution



Q.29 A bar magnet of magnetic moment M is placed at right angles to a magnetic induction B. If a force F is experienced by each pole of the magnet, the length of the magnet will be

[NEET 2013 (Karnataka)]

- (1) MB/F (2) BF/M (3) MF/B (4) F/MB

Scan or tap for the full solution



Q.30 The primary of a transformer when connected to a dc battery of 10 Volt draws a current of 1 mA. The number of turns of the primary and secondary windings are 50 and 100 respectively. The voltage in the secondary and the current drawn by the circuit in the secondary are respectively

[NEET 2013 (Karnataka)]

- (1) 20 V and 2.0 mA
(2) 10 V and 0.5 mA
(3) Zero volt and therefore no current
(4) 20 V and 0.5 mA

Scan or tap for the full solution



Q.31 A current of 2.5 A flows through a coil of inductance 5 H. The magnetic flux linked with the coil is

[NEET 2013 (Karnataka)]

- (1) 0.5 Wb (2) 12.5 Wb (3) zero (4) 2 Wb

Scan or tap for the full solution



Q.32 An electromagnetic wave of frequency $\nu = 3.0 \text{ MHz}$ passes from vacuum into a dielectric medium with relative permittivity $\epsilon_r = 4.0$. Then

[NEET 2013 (Karnataka)]

- (1) Wavelength is doubled and frequency becomes half.
(2) Wavelength is halved and frequency remains unchanged.
(3) Wavelength and frequency both remain unchanged.
(4) Wavelength is doubled and frequency unchanged.

Scan or tap for the full solution



Q.33 In Young's double slit experiment the distance between the slits and the screen is doubled. The separation between the slits is reduced to half. As a result the fringe width

[NEET 2013 (Karnataka)]

- (1) is halved (2) becomes four times
(3) remains unchanged (4) is doubled

Scan or tap for the full solution



Q.34 A parallel beam of light of wavelength λ is incident normally on a narrow slit. A diffraction pattern is formed on a screen placed perpendicular to the direction of the incident beam. At the second minimum of the diffraction pattern, the phase difference between the rays coming from the two edges of slit is

[NEET 2013 (Karnataka)]

- (1) 2π (2) 3π (3) 4π (4) $\pi\lambda$

Scan or tap for the full solution



Q.35 The reddish appearance of the sun at sunrise and sunset is due to

[NEET 2013 (Karnataka)]

- (1) the scattering of light
(2) the polarisation of light
(3) the colour of the sun
(4) the colour of the sky

Scan or tap for the full solution



Q.36 Two plane mirrors are inclined at 70° . A ray incident on one mirror at angle θ , after reflection falls on second mirror and is reflected from there parallel to first mirror. The value of θ is

[NEET 2013 (Karnataka)]

- (1) 45° (2) 30° (3) 55° (4) 50°

Scan or tap for the full solution



Q.37 A source of light is placed at a distance of 50 cm from a photo cell and the stopping potential is found to be V_0 . If the distance between the light source and photo cell is made 25 cm, the new stopping potential will be : [NEET 2013 (Karnataka)]

- (1) $V_0/2$ (2) V_0 (3) $4V_0$ (4) $2V_0$

Scan or tap for the full solution



Q.38 The de-broglie wavelength of neutrons in thermal equilibrium at temperature T is

[NEET 2013 (Karnataka)]

- (1) $\frac{3.08}{\sqrt{T}} \text{ \AA}$ (2) $\frac{0.308}{\sqrt{T}} \text{ \AA}$
 (3) $\frac{0.0308}{\sqrt{T}} \text{ \AA}$ (4) $\frac{30.8}{\sqrt{T}} \text{ \AA}$

Scan or tap for the full solution



Q.39 How does the Binding Energy per nucleon vary with the increase in the number of nucleons ?

[NEET 2013 (Karnataka)]

- (1) Decreases continuously with mass number.
 (2) First decreases and then increases with increase in mass number.
 (3) First increases and then decreases with increase in mass number.
 (4) Increases continuously with mass number.

Scan or tap for the full solution



Q.40 An electron in hydrogen atom makes a transition $n_1 \rightarrow n_2$ where n_1 and n_2 are principal quantum numbers of the two states. Assuming Bohr's model to be valid, the time period of the electron in the initial state is eight times that in the final state. The possible values of n_1 and n_2 are

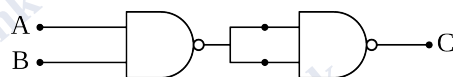
[NEET 2013 (Karnataka)]

- (1) $n_1 = 6$ and $n_2 = 2$ (2) $n_1 = 8$ and $n_2 = 1$
 (3) $n_1 = 8$ and $n_2 = 2$ (4) $n_1 = 4$ and $n_2 = 2$

Scan or tap for the full solution



Q.41 The output from a NAND gate is divided into two in parallel and fed to another NAND gate. The resulting gate is a [NEET 2013 (Karnataka)]



- (1) AND gate (2) NOR gate
 (3) OR gate (4) NOT gate

Scan or tap for the full solution



Q.42 In an unbiased p-n junction, holes diffuse from the p-region to n-region because of

[NEET 2013 (Karnataka)]

- (1) The attraction of free electrons of n-region.
 (2) The higher hole concentration in p-region than that in n-region.
 (3) The higher concentration of electrons in the n-region than that in the p-region.
 (4) The potential difference across the p-n junction.

Scan or tap for the full solution



Q.43 Two sources P and Q produce notes of frequency 660 Hz each. A listener moves from P to Q with a speed of 1 m s^{-1} . If the speed of sound is 330 m/s, then the number of beats heard by the listener per second will be [NEET 2013 (Karnataka)]

- (1) 4 (2) 8 (3) 2 (4) zero

Scan or tap for the full solution



Q.44 α -particles, β -particles and γ -rays are all having same energy. Their penetrating power in a given medium in increasing order will be

[NEET 2013 (Karnataka)]

- (1) γ , α , β (2) α , β , γ (3) β , α , γ (4) β , γ , α

Scan or tap for the full solution



Q.45 One way in which the operation of an n-p-n transistor differs from that of a p-n-p is

[NEET 2013 (Karnataka)]

- (1) The emitter junction injects minority carriers into the base region of the p-n-p
 (2) The emitter injects holes into the base of the p-n-p and electrons into the base region of n-p-n
 (3) The emitter injects holes into the base of n-p-n
 (4) The emitter junction is reverse biased in n-p-n

Scan or tap for the full solution



Q.46 In an experiment it showed that 10 mL of 0.05 M solution of chloride required 10 mL of 0.1 M solution of AgNO_3 , which of the following will be the formula of the chloride (X stands for the symbol of the element other than chlorine)

[NEET 2013 (Karnataka)]

- (1) X_2Cl_2 (2) XCl_2 (3) XCl_4 (4) X_2Cl

Scan or tap for the full solution



Q.47 The outer electronic configuration of Gd (At. No. 64) is [NEET 2013 (Karnataka)]

- (1) $4f^5 5d^4 6s^1$ (2) $4f^7 5d^1 6s^2$
(3) $4f^3 5d^5 6s^2$ (4) $4f^4 5d^5 6s^1$

Scan or tap for the full solution



Q.48 According to law of photochemical equivalence the energy absorbed (in ergs/mole) is given as ($h = 6.62 \times 10^{-27}$ ergs, $c = 3 \times 10^{10}$ cm s⁻¹, $N_A = 6.02 \times 10^{23}$ mol⁻¹) [NEET 2013 (Karnataka)]

- (1) $\frac{1.196 \times 10^8}{\lambda}$ (2) $\frac{2.859 \times 10^5}{\lambda}$
(3) $\frac{2.859 \times 10^{16}}{\lambda}$ (4) $\frac{1.196 \times 10^{16}}{\lambda}$

Scan or tap for the full solution



Q.49 Which one of the following arrangements represents the correct order of least negative to most negative electron gain enthalpy for C, Ca, Al, F and O? [NEET 2013 (Karnataka)]

- (1) $Al < Ca < O < C < F$ (2) $Al < O < C < Ca < F$
(3) $C < F < O < Al < Ca$ (4) $Ca < Al < C < O < F$

Scan or tap for the full solution



Q.50 The pair of species that has the same bond order in the following is [NEET 2013 (Karnataka)]

- (1) CO, NO⁺ (2) NO⁻, CN⁻
(3) O₂, N₂ (4) O₂, B₂

Scan or tap for the full solution



Q.51 The outer orbitals of C in ethene molecule can be considered to be hybridized to give three equivalent sp² orbitals. The total number of sigma (σ) and pi (π) bonds in ethene molecule is [NEET 2013 (Karnataka)]

- (1) 3 sigma (σ) and 2 pi (π) bonds
(2) 4 sigma (σ) and 1 pi (π) bonds
(3) 5 sigma (σ) and 1 pi (π) bonds
(4) 1 sigma (σ) and 2 pi (π) bonds

Scan or tap for the full solution



Q.52 In which of the following pair both the species have sp³ hybridization? [NEET 2013 (Karnataka)]

- (1) SiF₄, BeH₂ (2) NF₃, H₂O
(3) NF₃, BF₃ (4) H₂S, BF₃

Scan or tap for the full solution



Q.53 In which of the following ionization processes the bond energy increases and the magnetic behaviour changes from paramagnetic to diamagnetic. [NEET 2013 (Karnataka)]

- (1) $O_2 \longrightarrow O_2^+$ (2) $C_2 \longrightarrow C_2^+$
(3) $NO \longrightarrow NO^+$ (4) $N_2 \longrightarrow N_2^+$

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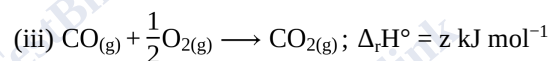
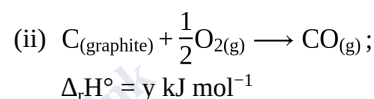
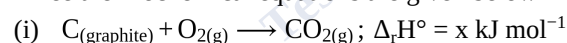
Q.54 When 5 litres of a gas mixture of methane and propane is perfectly combusted at 0°C and 1 atmosphere, 16 litres of oxygen at the same temperature and pressure is consumed. The amount of heat released from this combustion in kJ ($\Delta H_{\text{comb.}}(\text{CH}_4) = 890$ kJ mol⁻¹, $\Delta H_{\text{comb.}}(\text{C}_3\text{H}_8) = 2220$ kJ mol⁻¹) is [NEET 2013 (Karnataka)]

- (1) 38 (2) 317 (3) 477 (4) 32

Scan or tap for the full solution



Q.55 Three thermochemical equations are given below



Based on the above equations, find out which of the relationship given below is correct.

[NEET 2013 (Karnataka)]

- (1) $z = x + y$ (2) $x = y + z$
(3) $y = 2z - x$ (4) $x = y - z$

Scan or tap for the full solution



Q.56 Accumulation of lactic acid (HC₃H₅O₃), a monobasic acid in tissues leads to pain and a feeling of fatigue. In a 0.10 M aqueous solution, lactic acid is 3.7% dissociated. The value of dissociation constant, K_a, for this acid will be [NEET 2013 (Karnataka)]

- (1) 1.4×10^{-5} (2) 1.4×10^{-4}
(3) 3.7×10^{-4} (4) 2.8×10^{-4}

Scan or tap for the full solution



Q.57 At 100°C the K_w of water is 55 times its value at 25°C. What will be the pH of neutral solution? (log 55 = 1.74) [NEET 2013 (Karnataka)]

- (1) 7.00 (2) 7.87 (3) 5.13 (4) 6.13

Scan or tap for the full solution



Q.58 The values of K_{sp} of CaCO₃ and CaC₂O₄ are 4.7×10^{-9} and 1.3×10^{-9} respectively at 25°C. If the mixture of these two is washed with water, what is the concentration of Ca²⁺ ions in water? [NEET 2013 (Karnataka)]

- (1) $5.831 \times 10^{-5} \text{ M}$ (2) $6.856 \times 10^{-5} \text{ M}$
 (3) $3.606 \times 10^{-5} \text{ M}$ (4) $7.746 \times 10^{-5} \text{ M}$

Scan or tap for the full solution



Q.59 The dissociation constant of weak acid is 1×10^{-4} . In order to prepare a buffer solution with a $\text{pH} = 5$, the $[\text{Salt}]/[\text{Acid}]$ ratio should be

[NEET 2013 (Karnataka)]

- (1) 4 : 5 (2) 10 : 1 (3) 5 : 4 (4) 1 : 10

Scan or tap for the full solution



Q.60 Arrange the following in increasing order of stability

- $(\text{CH}_3)_2\text{C}^+-\text{CH}_2-\text{CH}_3$
- $(\text{CH}_3)_3\text{C}^+$
- $(\text{CH}_3)_2\text{CH}^+$
- $\text{CH}_3-\text{CH}_2^+$
- CH_3^+

[NEET 2013 (Karnataka)]

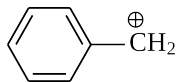
- (1) $5 < 4 < 3 < 1 < 2$ (2) $4 < 5 < 3 < 1 < 2$
 (3) $1 < 5 < 4 < 3 < 2$ (4) $5 < 4 < 3 < 2 < 1$

Scan or tap for the full solution



Q.61 What is the hybridisation state of benzyl carbonium ion?

[NEET 2013 (Karnataka)]



- (1) sp^2 (2) sp^{d^2} (3) sp^2d (4) sp^3

Scan or tap for the full solution



Q.62 Nitrogen detection in an organic compound is carried out by Lassaigne's test. The blue colour formed corresponds to which of the following formulae?

[NEET 2013 (Karnataka)]

- (1) $\text{Fe}_3[\text{Fe}(\text{CN})_6]_2$ (2) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$
 (3) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_2$ (4) $\text{Fe}_3[\text{Fe}(\text{CN})_6]_3$

Scan or tap for the full solution



Q.63 Homolytic fission of the following alkanes forms free radicals CH_3-CH_3 , $\text{CH}_3-\text{CH}_2-\text{CH}_3$, $(\text{CH}_3)_2\text{CH}-\text{CH}_3$, $\text{CH}_3-\text{CH}_2-\text{CH}(\text{CH}_3)_2$. Increasing order of stability of the radicals is

[NEET 2013 (Karnataka)]

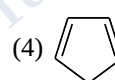
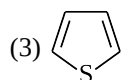
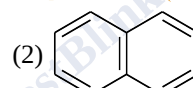
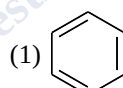
- (1) $(\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}_2 < (\text{CH}_3)_3\dot{\text{C}}$
 (2) $\text{CH}_3-\dot{\text{C}}\text{H}_2 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < (\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2-\text{CH}_3 < (\text{CH}_3)_3\dot{\text{C}}$
 (3) $\text{CH}_3-\dot{\text{C}}\text{H}_2 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < (\text{CH}_3)_3\dot{\text{C}} < (\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2-\text{CH}_3$
 (4) $(\text{CH}_3)_3\dot{\text{C}} < (\text{CH}_3)_2\dot{\text{C}}-\text{CH}_2-\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}-\text{CH}_3 < \text{CH}_3-\dot{\text{C}}\text{H}_2$

Scan or tap for the full solution



Q.64 Which of the following chemical system is non aromatic?

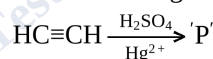
[NEET 2013 (Karnataka)]



Scan or tap for the full solution



Q.65 In the following reaction:



Product 'P' will not give

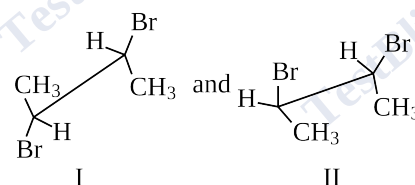
[NEET 2013 (Karnataka)]

- (1) Tollen's reagent test (2) Brady's reagent test
 (3) Victor Meyer test (4) Iodoform test

Scan or tap for the full solution



Q.66 Given:



I and II are

[NEET 2013 (Karnataka)]

- (1) identical
 (2) a pair of conformers
 (3) a pair of geometrical isomers
 (4) a pair of optical isomers

Scan or tap for the full solution



Q.67 Number of isomeric alcohols of molecular formula $\text{C}_6\text{H}_{14}\text{O}$ which give positive iodoform test is

[NEET 2013 (Karnataka)]

- (1) three (2) four (3) five (4) two

Scan or tap for the full solution



Q.68 On hydrolysis of a "compound", two compounds are obtained. One of which on treatment with sodium nitrite and hydrochloric acid gives a product which does not respond to iodoform test. The second one reduces Tollens reagent and Fehling's solution. The "compound" is

[NEET 2013 (Karnataka)]

- (1) $\text{CH}_3\text{CH}_2\text{CH}_2\text{NC}$
 (2) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CN}$
 (3) $\text{CH}_3\text{CH}_2\text{CH}_2\text{ON}=\text{O}$
 (4) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CON}(\text{CH}_3)_2$

Scan or tap for the full solution



Q.69 Some reactions of amines are given. Which one is not correct?

[NEET 2013 (Karnataka)]

- (1) $(\text{CH}_3)_2\text{N}-\text{C}_6\text{H}_5 + \text{NaNO}_2 + \text{HCl} \longrightarrow (\text{CH}_3)_2\text{N}-\text{C}_6\text{H}_4-\text{N}^+\equiv\text{N}^-\text{Cl}^-$
 (2) $\text{CH}_3\text{CH}_2\text{NH}_2 + \text{HNO}_2 \longrightarrow \text{CH}_3\text{CH}_2\text{OH} + \text{N}_2$
 (3) $\text{CH}_3\text{NH}_2 + \text{C}_6\text{H}_5\text{SO}_2\text{Cl} \longrightarrow \text{CH}_3\text{NHSO}_2\text{C}_6\text{H}_5$
 (4) $(\text{CH}_3)_2\text{NH} + \text{NaNO}_2 + \text{HCl} \longrightarrow (\text{CH}_3)_2\text{N}-\text{N}=\text{O}$

Scan or tap for the full solution



Q.70 In DNA, the linkages between different nitrogenous bases are

[NEET 2013 (Karnataka)]

- (1) phosphate linkage (2) H-bonding
 (3) glycosidic linkage (4) peptide linkage

Scan or tap for the full solution



Q.71 Which condition is not satisfied by an ideal solution?

[NEET 2013 (Karnataka)]

- (1) $\Delta_{\text{mix}}V = 0$
 (2) $\Delta_{\text{mix}}S = 0$
 (3) Obedience to Raoult's Law
 (4) $\Delta_{\text{mix}}H = 0$

Scan or tap for the full solution



Q.72 Consider the half-cell reduction reaction
 $\text{Mn}^{2+} + 2\text{e}^- \longrightarrow \text{Mn}$, $E^\circ = -1.18 \text{ V}$
 $\text{Mn}^{2+} \longrightarrow \text{Mn}^{3+} + \text{e}^-$, $E^\circ = -1.51 \text{ V}$
 The E° for the reaction $3\text{Mn}^{2+} \longrightarrow \text{Mn} + 2\text{Mn}^{3+}$, and possibility of the forward reaction are respectively

[NEET 2013 (Karnataka)]

- (1) -4.18 V and yes (2) $+0.33 \text{ V}$ and yes
 (3) $+2.69 \text{ V}$ and no (4) -2.69 V and no

Scan or tap for the full solution



Q.73 How many gram of cobalt metal will be deposited when a solution of cobalt (II) chloride is electrolyzed with a current of 10 amperes for 109 minutes (1 Faraday = 96,500 C; Atomic mass of Co = 59 u)

[NEET 2013 (Karnataka)]

- (1) 4.0 (2) 20.0 (3) 40.0 (4) 0.66

Scan or tap for the full solution



Q.74 For a reaction between A and B the order with respect to A is 2 and the order with respect to B is 3. The concentrations of both A and B are doubled, the rate will increase by a factor of

[NEET 2013 (Karnataka)]

- (1) 12 (2) 16 (3) 32 (4) 10

Scan or tap for the full solution



Q.75 A reaction is 50% complete in 2 hours and 75% complete in 4 hours. The order of reaction is

[NEET 2013 (Karnataka)]

- (1) 1 (2) 2 (3) 3 (4) 0

Scan or tap for the full solution



Q.76 Which statement is wrong? [NEET 2013 (Karnataka)]

- (1) Beryl is an example of cyclic silicate.
 (2) Mg_2SiO_4 is orthosilicate.
 (3) Basic structural unit in silicates is the SiO_4 tetrahedron.
 (4) Feldspars are not aluminosilicates.

Scan or tap for the full solution



Q.77 Identify the incorrect statement, regarding the molecule XeO_4 :

[NEET 2013 (Karnataka)]

- (1) XeO_4 molecule is square planar.
 (2) There are four $\text{p}\pi - \text{d}\pi$ bonds.
 (3) There are four $\text{sp}^3 - \text{p}$, σ bonds.
 (4) XeO_4 molecule is tetrahedral.

Scan or tap for the full solution



Q.78 Sc ($Z = 21$) is a transition element but Zn ($Z = 30$) is not because

[NEET 2013 (Karnataka)]

- (1) both Sc^{3+} and Zn^{2+} ions are colourless and form white compounds.
 (2) in case of Sc, 3d orbitals are partially filled but in Zn these are filled.
 (3) last electron is assumed to be added to 4s level in case of Zn.
 (4) both Sc and Zn do not exhibit variable oxidation states.

Scan or tap for the full solution



Q.79 Crystal field splitting energy for high spin d^4 octahedral complex is

[NEET 2013 (Karnataka)]

- (1) $-1.2 \Delta_o$ (2) $-0.6 \Delta_o$ (3) $-0.8 \Delta_o$ (4) $-1.6 \Delta_o$

Scan or tap for the full solution



Q.80 In a particular isomer of $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$, the $\text{Cl} - \text{Co} - \text{Cl}$ angle is 90° , this isomer is known as

[NEET 2013 (Karnataka)]

- (1) optical isomer (2) cis-isomer
(3) position isomer (4) linkage isomer.

Scan or tap for the full solution



Q.81 The anion of acetylacetone (acac) forms $\text{Co}(\text{acac})_3$ chelate with Co^{3+} . The rings of the chelate are

[NEET 2013 (Karnataka)]

- (1) five membered (2) four membered
(3) six membered (4) three membered.

Scan or tap for the full solution



Q.82 The correct IUPAC name for $[\text{CrF}_2(\text{en})_2]\text{Cl}$ is

[NEET 2013 (Karnataka)]

- (1) chloro difluorido ethylene diaminechromium (III) chloride
(2) difluoridobis (ethylene diamine) chromium (III) chloride
(3) difluorobis-(ethylene diamine) chromium (III) chloride
(4) chloro difluoridobis (ethylene diamine) chromium (III)

Scan or tap for the full solution



Q.83 Which among the following is a paramagnetic complex?

[NEET 2013 (Karnataka)]

- (1) $[\text{Co}(\text{NH}_3)_6]^{3+}$ (2) $[\text{Pt}(\text{en})\text{Cl}_2]$
(3) $[\text{CoBr}_4]^{2-}$ (4) $\text{Mo}(\text{CO})_6$

Scan or tap for the full solution



Q.84 Which is diamagnetic?

[NEET 2013 (Karnataka)]

- (1) $[\text{Co}(\text{F})_6]^{3-}$ (2) $[\text{Ni}(\text{CN})_4]^{2-}$
(3) $[\text{NiCl}_4]^{2-}$ (4) $[\text{Fe}(\text{CN})_6]^{3-}$

Scan or tap for the full solution



Q.85 What is the density of N_2 gas at 227°C and 5.00 atm pressure? ($R = 0.082 \text{ L atm K}^{-1} \text{ mol}^{-1}$)

[NEET 2013 (Karnataka)]

- (1) 1.40 g/L (2) 2.81 g/L (3) 3.41 g/L (4) 0.29 g/L

Scan or tap for the full solution



Q.86 In Castner-Kellner cell for production of sodium hydroxide

[NEET 2013 (Karnataka)]

- (1) brine is electrolyzed using graphite electrodes
(2) molten sodium chloride is electrolysed
(3) sodium amalgam is formed at mercury cathode
(4) brine is electrolyzed with Pt electrodes

Scan or tap for the full solution



Q.87 The metal oxide which cannot be reduced to metal by carbon is

[NEET 2013 (Karnataka)]

- (1) Al_2O_3 (2) PbO (3) ZnO (4) Fe_2O_3

Scan or tap for the full solution



Q.88 Dettol is the mixture of

[NEET 2013 (Karnataka)]

- (1) chloroxylenol and bithional
(2) chloroxylenol and terpineol
(3) phenol and iodine
(4) terpineol and bithionol

Scan or tap for the full solution



Q.89 Which one of the following statements is not true?

[NEET 2013 (Karnataka)]

- (1) Clean water would have a BOD value of 5 ppm.
(2) Fluoride deficiency in drinking water is harmful. Soluble fluoride is often used to bring its concentration up to 1 ppm.
(3) When the pH of rain water is higher than 6.5, it is called acid rain.
(4) Dissolved Oxygen (DO) in cold water can reach a concentration up to 10 ppm.

Scan or tap for the full solution



Q.90 The common characteristics between tomato and potato will be maximum at the level of their

[NEET 2013 (Karnataka)]

- (1) family (2) order (3) division (4) genus.

Scan or tap for the full solution



Q.91 Why is a capsule advantageous to a bacterium?

[NEET 2013 (Karnataka)]

- (1) It protects the bacterium from desiccation.
(2) It provides means of locomotion
(3) It allows bacterium to "hide" from host's immune system.
(4) It allows the bacterium to attach to the surface.

Scan or tap for the full solution



Q.92 Which one of the following is true for fungi?

[NEET 2013 (Karnataka)]

- (1) They lack a rigid cell wall.
- (2) They are heterotrophs.
- (3) They lack nuclear membrane.
- (4) They are phagotrophs.

Scan or tap for the full solution



Q.93 Syngamy can occur outside the body of the organism in [NEET 2013 (Karnataka)]

- (1) mosses (2) algae (3) ferns (4) Fungi

Scan or tap for the full solution



Q.94 What is common in all the three, *Funaria*, *Dryopteris* and *Ginkgo*? [NEET 2013 (Karnataka)]

- (1) Presence of archegonia
- (2) Well developed vascular tissues
- (3) Independent gametophyte
- (4) Independent sporophyte

Scan or tap for the full solution



Q.95 Which one of the following is wrongly matched?

[NEET 2013 (Karnataka)]

- (1) *Spirogyra* - Motile gametes
- (2) *Sargassum* - Chlorophyll
- (3) Basidiomycetes - Puffballs
- (4) *Nostoc* - Water blooms

Scan or tap for the full solution



Q.96 The plant body is thalloid in

[NEET 2013 (Karnataka)]

- (1) *Sphagnum* (2) *Salvinia*
(3) *Marchantia* (4) *Funaria*.

Scan or tap for the full solution



Q.97 Among flowers of *Calotropis*, tulip, *Sesbania*, *Asparagus*, *Colchicum*, sweet pea, *Petunia*, *Indigofera*, mustard, soybean, tobacco and groundnut, how many plants have corolla with valvate aestivation? [NEET 2013 (Karnataka)]

- (1) Six (2) Seven (3) Eight (4) Five

Scan or tap for the full solution



Q.98 Inflorescence is racemose in

[NEET 2013 (Karnataka)]

- (1) brinjal (2) tulip (3) aloe (4) soybean.

Scan or tap for the full solution



Q.99 In a cymose inflorescence the main axis

[NEET 2013 (Karnataka)]

- (1) has unlimited growth
- (2) bears a solitary flower
- (3) has unlimited growth but lateral branches end in flowers
- (4) terminates in a flower.

Scan or tap for the full solution



Q.100 How many plants among China rose, *Ocimum*, sunflower, mustard, *Alstonia*, guava, *Calotropis* and *Nerium* (oleander) have opposite phyllotaxy?

[NEET 2013 (Karnataka)]

- (1) Three (2) Four (3) Five (4) Two

Scan or tap for the full solution



Q.101 Which of the following statements about enzymes is wrong? [NEET 2013 (Karnataka)]

- (1) Enzymes are denaturated at high temperatures.
- (2) Enzymes are mostly proteins but some are lipids also.
- (3) Enzymes are highly specific.
- (4) Enzymes require optimum pH and temperature for maximum activity.

Scan or tap for the full solution



Q.102 Uridine, present only in RNA is a

[NEET 2013 (Karnataka)]

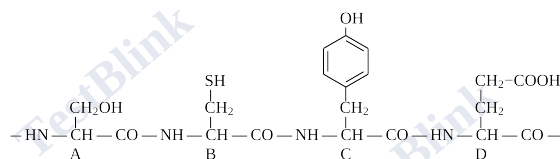
- (1) nucleoside (2) nucleotide
(3) purine (4) pyrimidine.

Scan or tap for the full solution



Q.103 The figure shows a hypothetical tetrapeptide portion of a protein with parts labelled A - D. Which one of the following options is correct?

[NEET 2013 (Karnataka)]



- (1) D is an acidic amino acid-glutamic acid.
- (2) C is an aromatic amino acid-tryptophan.
- (3) A is the C-terminal amino acid and D is N-terminal amino acid.
- (4) A is a sulphur containing amino acid methionine.

Scan or tap for the full solution



Q.104 During meiosis I, the chromosomes start pairing at

[NEET 2013 (Karnataka)]

- (1) zygotene (2) pachytene
- (3) diplotene (4) leptotene.

Scan or tap for the full solution



Q.105 During the metaphase stage of mitosis, spindle fibres attach to chromosomes at

[NEET 2013 (Karnataka)]

- (1) kinetochore
- (2) both centromere and kinetochore
- (3) centromere, kinetochore and areas adjoining centromere
- (4) centromere.

Scan or tap for the full solution



Q.106 The pineapple which under natural condition is difficult to blossom has been made to produce fruits throughout the year by application of

[NEET 2013 (Karnataka)]

- (1) NAA, 2,4-D (2) Phenyl acetic acid
- (3) Cytokinin (4) IAA, IBA.

Scan or tap for the full solution



Q.107 Animal vectors are required for pollination in

[NEET 2013 (Karnataka)]

- (1) *Vallisneria* (2) mulberry
- (3) cucumber (4) maize.

Scan or tap for the full solution



Q.108 Albuminous seeds store their reserve food mainly in

[NEET 2013 (Karnataka)]

- (1) endosperm (2) cotyledons
- (3) hypocotyl (4) perisperm.

Scan or tap for the full solution



Q.109 Megaspores are produced from the megaspore mother cells after

[NEET 2013 (Karnataka)]

- (1) mitotic division (2) formation of thick wall
- (3) differentiation (4) meiotic division.

Scan or tap for the full solution



Q.110 Which one of the following statements is correct?

[NEET 2013 (Karnataka)]

- (1) Cleistogamous flowers are always autogamous.
- (2) Xenogamy occurs only by wind pollination.
- (3) Chasmogamous flowers do not open at all.
- (4) Geitonogamy involves the pollen and stigma of flowers of different plants.

Scan or tap for the full solution



Q.111 Which of the following statements is correct?

[NEET 2013 (Karnataka)]

- (1) Sporopollenin can be degraded by enzymes.
- (2) Sporopollenin is made up of inorganic materials.
- (3) Sporopollenin can withstand high temperatures as well as strong acids and alkalis.
- (4) Sporopollenin can withstand high temperatures but not strong acids.

Scan or tap for the full solution



Q.112 In our society women are blamed for producing female children. Choose the correct answer for the sex-determination in humans.

[NEET 2013 (Karnataka)]

- (1) Due to some defect like aspermia in man
- (2) Due to the genetic make up of the particular sperm which fertilizes the egg
- (3) Due to the genetic make up of the egg
- (4) Due to some defect in the women

Scan or tap for the full solution



Q.113 Which one is the incorrect statement with regards to the importance of pedigree analysis?

[NEET 2013 (Karnataka)]

- (1) It confirms that DNA is the carrier of genetic information
- (2) It helps to trace the inheritance of a specific trait
- (3) It confirms that the trait is linked to one of the autosome
- (4) It helps to understand whether the trait in question is dominant or recessive

Scan or tap for the full solution



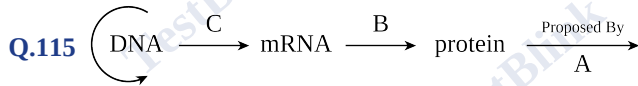
Q.114 Down's syndrome in humans is due to :

[NEET 2013 (Karnataka)]

- (1) Three 'X' chromosomes
- (2) Monosomy
- (3) Three copies of chromosome 21
- (4) Two 'Y' chromosomes

Scan or tap for the full solution





The figure gives an important concept in the genetic implication of DNA. Fill the blanks A, B and C.

[NEET 2013 (Karnataka)]

- (1) A - Erwin Chargaff
B - translation
C - replication
- (2) A - Maurice Wilkins
B - transcription
C - translation
- (3) A - Francis Crick
B - translation
C - transcription
- (4) A - James Watson
B - replication
C - extension

Scan or tap for the full solution



Q.116 Satellite RNA are present in some :

[NEET 2013 (Karnataka)]

- (1) Prions
- (2) Bacteriophages
- (3) Plant viruses
- (4) Viroids

Scan or tap for the full solution



Q.117 Which of the following is not a property of the genetic code ?

[NEET 2013 (Karnataka)]

- (1) Ambiguous
- (2) Universal
- (3) Degeneracy
- (4) Non-overlapping

Scan or tap for the full solution



Q.118 In an inducible operon, the genes are :

[NEET 2013 (Karnataka)]

- (1) usually expressed unless a signal turns them "off"
- (2) always expressed
- (3) never expressed
- (4) usually not expressed unless a signal turns them "on"

Scan or tap for the full solution



Q.119 One of the most frequently used techniques in DNA fingerprinting is :-

[NEET 2013 (Karnataka)]

- (1) SSCP
- (2) SCAR
- (3) VNTR
- (4) AFLP

Scan or tap for the full solution



Q.120 Tissue culture technique can produce infinite number of new plants from a small parental tissue. The economic importance of the technique is in raising:

[NEET 2013 (Karnataka)]

- (1) development of new species
- (2) genetically uniform population identical to the original parent
- (3) variants through picking up somaclonal variations
- (4) homozygous diploid plants

Scan or tap for the full solution



Q.121 Which of the following statements is not true about somatic embryogenesis ?

[NEET 2013 (Karnataka)]

- (1) Somatic embryos can develop from microspores
- (2) Somatic embryo is induced usually by an auxin such as 2,4-D
- (3) The pattern of development of a somatic embryo is comparable to that of a zygotic embryo
- (4) A somatic embryo develops from a somatic cell

Scan or tap for the full solution



Q.122 Microbe used for biocontrol of pest butterfly caterpillars is :

[NEET 2013 (Karnataka)]

- (1) *Streptococcus* sp.
- (2) *Trichoderma* sp.
- (3) *Saccharomyces cerevisiae*
- (4) *Bacillus thuringiensis*

Scan or tap for the full solution



Q.123 The age pyramid with broad base indicates :

[NEET 2013 (Karnataka)]

- (1) high percentage of young individuals
- (2) high percentage of old individuals
- (3) a stable population
- (4) low percentage of young individuals

Scan or tap for the full solution



Q.124 Which one of the following is not a parasitic adaptation ?

[NEET 2013 (Karnataka)]

- (1) Loss of digestive organs
- (2) Loss of unnecessary sense organs
- (3) Development of adhesive organs
- (4) Loss of reproductive capacity

Scan or tap for the full solution



Q.125 Benthic organisms are affected most by :

[NEET 2013 (Karnataka)]

- (1) Surface turbulence of water
- (2) Water-holding capacity of soil
- (3) Light reaching the forest floor
- (4) Sediment characteristics of aquatic ecosystems

Scan or tap for the full solution



Q.126 Which two distinct microbial processes are responsible for the release of fixed nitrogen as dinitrogen gas (N_2) to the atmosphere ?

[NEET 2013 (Karnataka)]

- (1) Anaerobic ammonium oxidation, and denitrification
- (2) Aerobic nitrate oxidation, and nitrite reduction
- (3) Enteric fermentation in cattle, and nitrogen fixation by Rhizobium in root nodules of legumes
- (4) Decomposition of organic nitrogen, and conversion of dinitrogen to ammonium compounds

Scan or tap for the full solution



Q.127 Which one of the following is a primary consumer in maize field ecosystem ?

[NEET 2013 (Karnataka)]

- (1) Phytoplankton
- (2) Lion
- (3) Grasshopper
- (4) Wolf

Scan or tap for the full solution



Q.128 When man eats fish which feeds on zooplankton which have eaten small plants, the producer in the chain is :

[NEET 2013 (Karnataka)]

- (1) Zooplankton
- (2) Fish
- (3) Small plants
- (4) Man

Scan or tap for the full solution



Q.129 The largest tiger reserve in India is :-

[NEET 2013 (Karnataka)]

- (1) Nagarjunsagar - Srisailem
- (2) Nagarhole
- (3) Valmiki
- (4) Periyar

Scan or tap for the full solution



Q.130 Which of the following has maximum genetic diversity in India?

[NEET 2013 (Karnataka)]

- (1) Wheat
- (2) Rice
- (3) Mango
- (4) Groundnut

Scan or tap for the full solution



Q.131 Which organization publishes the 'Red Data Book' ?

[NEET 2013 (Karnataka)]

- (1) WWF
- (2) GEF
- (3) IUCN
- (4) UNEP

Scan or tap for the full solution



Q.132 Meristematic tissue responsible for increase in girth of tree trunk is :

[NEET 2013 (Karnataka)]

- (1) Phellogen
- (2) Intercalary meristem
- (3) Apical meristem
- (4) Lateral meristem

Scan or tap for the full solution



Q.133 Bundle sheath cells :

[NEET 2013 (Karnataka)]

- (1) lack both RuBisCo and PEP carboxylase
- (2) are rich in PEP carboxylase
- (3) are rich in RuBisCo
- (4) lack RuBisCo

Scan or tap for the full solution



Q.134 Which of the following statements is not true for stomatal apparatus ?

[NEET 2013 (Karnataka)]

- (1) Stomata are involved in gaseous exchange
- (2) Inner walls of guard cells are thick
- (3) Guard cells invariably possess chloroplasts and mitochondria
- (4) Guard cells are always surrounded by subsidiary cells

Scan or tap for the full solution



Q.135 The term 'glycocalyx' is used for :

[NEET 2013 (Karnataka)]

- (1) bacterial cell glyco-engineered to possess N-glycosylated proteins
- (2) a layer present between cell wall and membrane of bacteria
- (3) a layer surrounding the cell wall of bacteria
- (4) cell wall of bacteria

Scan or tap for the full solution



Q.136 Which of the following types of plastids does not contain stored food material ?

[NEET 2013 (Karnataka)]

- (1) Elaioplasts
- (2) Chromoplasts
- (3) Amyloplast
- (4) Aleuroplast

Scan or tap for the full solution



Q.137 Which of the following best illustrates "FEEDBACK" in development ?

[NEET 2013 (Karnataka)]

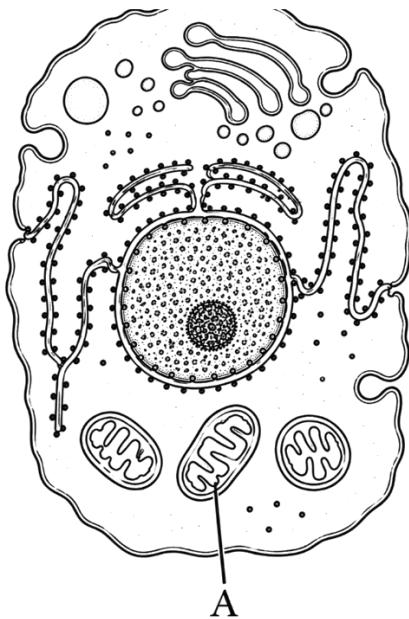
- (1) As tissue (X) develops, it secretes something that induces tissue (Y) to develop
- (2) As tissue (X) develops, it secretes something that slows down the growth of tissue (Y)
- (3) Tissue (X) secretes RNA which changes the development of tissue (Y)
- (4) As tissue (X) develops, it secretes enzymes that inhibit the development of tissue (Y)

Scan or tap for the full solution



Q.138 Select the alternative giving correct identification and function of the organelle 'A' in the diagram

[NEET 2013 (Karnataka)]



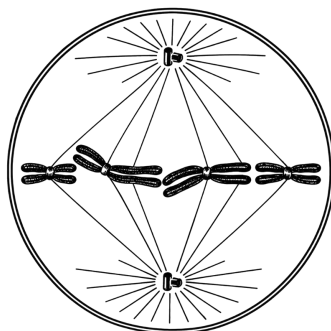
- (1) Golgi body - provides packaging material
- (2) Mitochondria - produce cellular energy in the form of ATP
- (3) Endoplasmic reticulum - synthesis of lipids
- (4) Lysosomes - secrete hydrolytic enzymes

Scan or tap for the full solution



Q.139 A stage of mitosis is shown in the diagram. Which stage is it and what are its characteristics?

[NEET 2013 (Karnataka)]



- (1) Anaphase - Centromeres split and chromatids separate and start moving away.
- (2) Late prophase - Chromosomes move to spindle equator.
- (3) Metaphase - Spindle fibers attached to kinetochores, centromeres split and chromatids separate.
- (4) Metaphase - Chromosomes moved to spindle equator, chromosomes made up of two sister chromatids.

Scan or tap for the full solution



Q.140 Specialized cells for fixing atmospheric nitrogen in *Nostoc* are

[NEET 2013 (Karnataka)]

- (1) heterocysts
- (2) hormogonia
- (3) nodules
- (4) akinetes

Scan or tap for the full solution



Q.141 Which of the following elements is a constituent of biotin?

[NEET 2013 (Karnataka)]

- (1) Magnesium
- (2) Calcium
- (3) Phosphorus
- (4) Sulphur

Scan or tap for the full solution



Q.142 Which two distinct microbial processes are responsible for the release of fixed nitrogen as dinitrogen gas (N_2) to the atmosphere?

[NEET 2013 (Karnataka)]

- (1) Aerobic nitrate oxidation and nitrate reduction
- (2) Decomposition of organic nitrogen and conversion of dinitrogen to ammonium compounds
- (3) Enteric fermentation in cattle and nitrogen fixation by *Rhizobium* in root nodules of legumes
- (4) Anaerobic ammonium oxidation and denitrification

Scan or tap for the full solution



Q.143 The viability of seeds is tested by :

[NEET 2013 (Karnataka)]

- (1) 2,3,5-triphenyl tetrazolium chloride
- (2) Safranin
- (3) 2,6-dichlorophenol indophenol
- (4) DMSO

Scan or tap for the full solution



Q.144 The second commitment period for Kyoto Protocol was decided at : [NEET 2013 (Karnataka)]

- (1) Doha (2) Cancun (3) Durban (4) Bali

Scan or tap for the full solution



Q.145 Climate of the world is threatened by :

[NEET 2013 (Karnataka)]

- (1) Decreasing amount of atmospheric carbon dioxide
(2) Increasing concentration of atmospheric oxygen
(3) Decreasing amount of atmospheric oxygen
(4) Increasing amount of atmospheric carbon dioxide

Scan or tap for the full solution



Q.146 Which one of the following is not correct as regards the harmful effects of particulate matter of the size 2.5 micrometers or less?

[NEET 2013 (Karnataka)]

- (1) It can directly enter into our circulatory system
(2) It can be inhaled into the lungs
(3) It can cause respiratory problems
(4) It can cause inflammation and damage to the lungs

Scan or tap for the full solution



Q.147 The characteristics of Class Reptilia are

[NEET 2013 (Karnataka)]

- (1) body covered with moist skin which is devoid of scales, the ear is represented by a tympanum, alimentary canal, urinary and reproductive tracts open into a common cloaca
(2) fresh water animals with bony endoskeleton, air-bladder to regulate buoyancy
(3) marine animals with cartilaginous endoskeleton, body covered with placoid scales
(4) body covered with dry and cornified skin, scales over the body are epidermal, they do not have external ears.

Scan or tap for the full solution



Q.148 Which one of the following groups of animals reproduces only by sexual means?

[NEET 2013 (Karnataka)]

- (1) Cnidaria (2) Porifera
(3) Protozoa (4) Ctenophora

Scan or tap for the full solution



Q.149 Which one of the following animals is correctly matched with its one characteristic and the taxon?

[NEET 2013 (Karnataka)]

Animal	Characteristic	Taxon
(1) Millipede	Ventral nerve cord	Arachnida

Animal	Characteristic	Taxon
(2) Sea anemone	Triploblastic	Cnidaria

Animal	Characteristic	Taxon
(3) Silverfish	Pectoral and pelvic fins	Chordata

Animal	Characteristic	Taxon
(4) Duckbilled platypus	Oviparous	Mammalia

Scan or tap for the full solution



Q.150 Sharks and dogfishes differ from skates and rays because [NEET 2013 (Karnataka)]

- (1) gill slits are ventrally placed
(2) head and trunk are widened considerably
(3) distinct demarcation between body and tail
(4) their pectoral fins distinctly marked off from cylindrical bodies.

Scan or tap for the full solution



Q.151 Which one of the following is one of the paths followed by air or O₂ during respiration in the adult male *Periplaneta americana* as it enters the animal body? [NEET 2013 (Karnataka)]

- (1) Spiracle in metathorax, trachea, tracheoles, oxygen diffuses into cells
(2) Mouth, bronchial tube, trachea, oxygen enters cells
(3) Spiracles in prothorax, tracheoles, trachea, oxygen diffuses into cells.
(4) Hypopharynx, mouth, pharynx, trachea, tissues

Scan or tap for the full solution



Q.152 Select the option which shows correct matching of animal with its excretory organ and excretory product. [NEET 2013 (Karnataka)]

(1)	Animal	Excretory organ	Excretory product
	Labeo (Rohu)	Nephridial tubes	Ammonia

(2)	Animal	Excretory organ	Excretory product
	Salamander	Kidneys	Urea

(3)	Animal	Excretory organ	Excretory product
	Peacock	Kidneys	Urea

(4)	Animal	Excretory organ	Excretory product
	Housefly	Renal tubules	Uric acid

Scan or tap for the full solution



Q.153 During muscle contraction in humans, the

[NEET 2013 (Karnataka)]

- (1) sarcomere does not shorten
- (2) A band remains same
- (3) A, H and I bands shorten
- (4) actin filaments shorten.

Scan or tap for the full solution



Q.154 Select the correct statement with respect to disorders of muscles in humans.

[NEET 2013 (Karnataka)]

- (1) Failure of neuromuscular transmission in myasthenia gravis can prevent normal swallowing.
- (2) Accumulation of urea and creatine in the joints causes their inflammation.
- (3) An overdose of vitamin D causes osteoporosis.
- (4) Rapid contractions of skeletal muscles cause muscle dystrophy.

Scan or tap for the full solution



Q.155 Select the option which correctly matches the endocrine gland with its hormone and its function.

[NEET 2013 (Karnataka)]

(1)	Endocrine gland	Hormone	Function
	Placenta	Estrogen	Initiates secretion of the milk

(2)	Endocrine gland	Hormone	Function
	Corpus luteum	Estrogen	Essential for maintenance of endometrium

(3)	Endocrine gland	Hormone	Function
	Leydig's cells	Androgen	Initiates the production of sperms

Endocrine gland	Hormone	Function
Ovary	FSH	Stimulates follicular development and the secretion of estrogens

Scan or tap for the full solution



Q.156 Norepinephrine

- (i) is released by sympathetic fibres
- (ii) is released by parasympathetic fibers
- (iii) increases the heart rate
- (iv) decreases blood pressure.

Which of the above statements are correct?

[NEET 2013 (Karnataka)]

- (1) (i) and (iii)
- (2) (ii) and (iii)
- (3) (ii) and (iv)
- (4) (i) and (iv)

Scan or tap for the full solution



Q.157 Which of the following represents the action of insulin?

[NEET 2013 (Karnataka)]

- (1) Increases blood glucose level by stimulating glucagon production.
- (2) Decreases blood glucose levels by forming glycogen.
- (3) Increases blood glucose levels by promoting cellular uptake of glucose.
- (4) Increases blood glucose levels by hydrolysis of glycogen.

Scan or tap for the full solution



Q.158 The foetal ejection reflex in humans triggers the release of

[NEET 2013 (Karnataka)]

- (1) oxytocin from foetal pituitary
- (2) human chorionic gonadotropin (hCG) from placenta
- (3) oxytocin from maternal pituitary
- (4) human placental lactogen (hPL) from placenta

Scan or tap for the full solution



Q.159 The stage transferred into the uterus after induced fertilization of ovum in the laboratory is

[NEET 2013 (Karnataka)]

- (1) morula
- (2) embryo at 2 blastomeres stage
- (3) zygote
- (4) embryo at 4 blastomeres stage

Scan or tap for the full solution



Q.160 One of the following is not a method of contraception. Which one? [NEET 2013 (Karnataka)]

- (1) Pills of a combination of oxytocin and vasopressin
- (2) Lippes loop
- (3) Condoms
- (4) Tubectomy

Scan or tap for the full solution



Q.161 Genes of interest can be selected from a genomic library by using : [NEET 2013 (Karnataka)]

- (1) Restriction enzymes
- (2) Gene targets
- (3) Cloning vectors
- (4) DNA probes

Scan or tap for the full solution



Q.162 Random unidirectional change in allele frequencies that occurs by chance in all populations and especially in small populations is known as :-

[NEET 2013 (Karnataka)]

- (1) Genetic drift
- (2) Migration
- (3) Mutation
- (4) Natural selection

Scan or tap for the full solution



Q.163 Genetic variation in a population arises due to :

[NEET 2013 (Karnataka)]

- (1) Reproductive isolation and selection
- (2) Mutations only
- (3) Mutations as well as recombination
- (4) Recombination only

Scan or tap for the full solution



Q.164 Dinosaurs dominated the World in which of the following geological era ? [NEET 2013 (Karnataka)]

- (1) Jurassic
- (2) Devonian
- (3) Coenozoic
- (4) Mesozoic

Scan or tap for the full solution



Q.165 The finch species of Galapagos Islands are grouped according to their food sources. Which of the following is not a finch food ?

[NEET 2013 (Karnataka)]

- (1) Insects
- (2) Carrion
- (3) Tree buds
- (4) Seeds

Scan or tap for the full solution



Q.166 Which one of the following statements is correct regarding Sexually Transmitted Diseases (STD) ?

[NEET 2013 (Karnataka)]

- (1) Haemophilia is one of the STD
- (2) The chances of a 5-year-old boy contracting an STD are very little
- (3) A person may contract syphilis by sharing milk with one already suffering from the disease
- (4) Genital herpes and sickle-cell anaemia are both STD

Scan or tap for the full solution



Q.167 Identify the site where *Wuchereria bancrofti* is normally found on human body :

[NEET 2013 (Karnataka)]

- (1) Blood vessels of the thigh region
- (2) Lymphatic vessels of the lower limbs
- (3) Muscles of the legs
- (4) Skin between the fingers

Scan or tap for the full solution



Q.168 Which one of the following is a hallucinogenic drug? [NEET 2013 (Karnataka)]

- (1) Morphine
- (2) Opium
- (3) Caffeine
- (4) Lysergic acid diethylamide

Scan or tap for the full solution



Q.169 During the process of isolation of DNA, chilled ethanol is added to :

[NEET 2013 (Karnataka)]

- (1) Break open the cell to release DNA
- (2) Remove proteins such as histones
- (3) Facilitate action of restriction enzymes
- (4) Precipitate DNA

Scan or tap for the full solution



Q.170 RNA interference involves :-

[NEET 2013 (Karnataka)]

- (1) Interference of RNA in synthesis of DNA
- (2) Synthesis of cDNA from RNA using reverse transcriptase
- (3) Synthesis of mRNA from DNA
- (4) Silencing of specific mRNA due to complementary RNA

Scan or tap for the full solution



Q.171 Which one of the following vectors is used to replace the defective gene in gene therapy ?

[NEET 2013 (Karnataka)]

- (1) Ti plasmid (2) Cosmid
(3) Ri plasmid (4) Adenovirus

Scan or tap for the full solution



Q.172 Select the correct option with respect to Cockroaches :-

[NEET 2013 (Karnataka)]

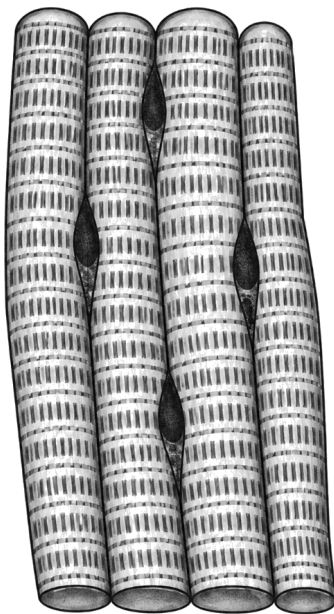
- (1) Nervous system comprises of a dorsal nerve cord and ten pairs of ganglion
(2) The fore wings are tegmina which are used in flight
(3) Malpighian tubules convert nitrogenous wastes into urea
(4) Males bear short anal styles not present in females

Scan or tap for the full solution



Q.173 Identify the tissue shown in the diagram and match with its characteristics and its location :-

[NEET 2013 (Karnataka)]



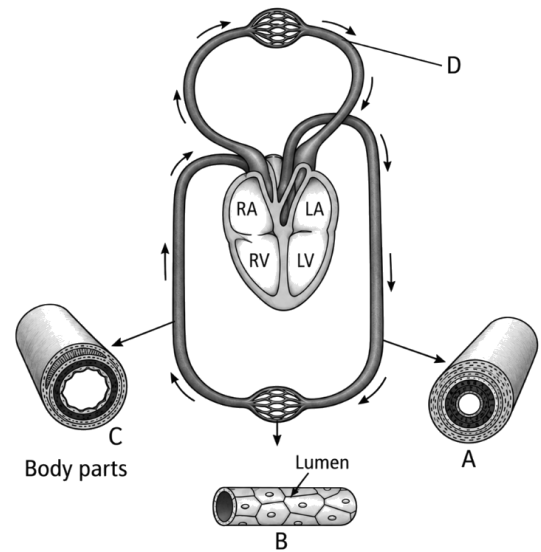
- (1) Smooth muscles, show branching, found in the walls of the heart.
(2) Striated muscles, tapering at both-ends, attached with the bones of the ribs
(3) Skeletal muscle, shows striations and closely attached with the bones of the limbs
(4) Cardiac muscles, unbranched muscles, found in the walls of the heart

Scan or tap for the full solution



Q.174 The figure shows blood circulation in humans with labels A to D. Select the option which gives correct identification of label and functions of the part.

[NEET 2013 (Karnataka)]

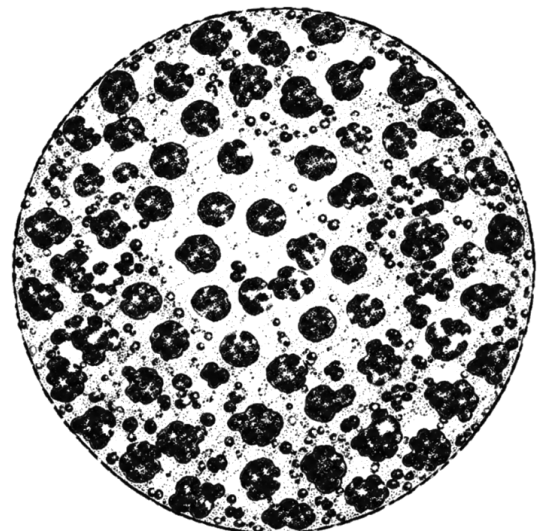


- (1) A - Artery-Thick walled and blood flows evenly
(2) C - Vein-Thin walled and blood flows in jerks/spurts
(3) D - Pulmonary vein-Takes oxygenated blood to heart, $pO_2 = 95$ mmHg
(4) B - Capillary-Thin without muscle layer and wall two cell layers thick

Scan or tap for the full solution



Q.175 The figure shows a human blood cell. Identify it and give its characteristics. [NEET 2013 (Karnataka)]



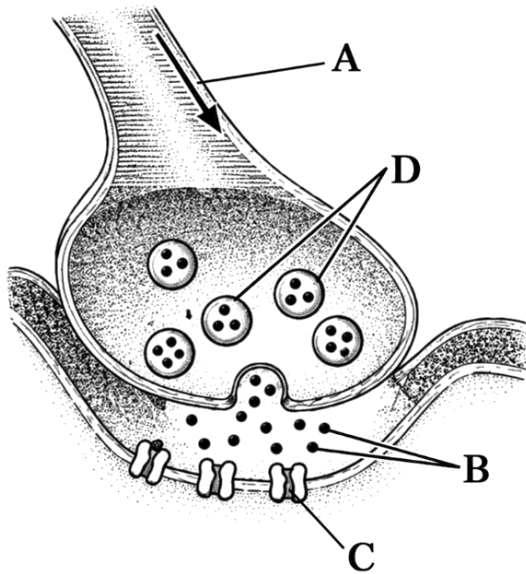
- (1) Blood cell → Monocyte, Characteristics → Life span of 3 days, produces antibodies
- (2) Blood cell → B-lymphocyte, Characteristics → Forms about 20% of blood cells involved in immune response
- (3) Blood cell → Basophil, Characteristics → Secretes serotonin, inflammatory response
- (4) Blood cell → Neutrophil, Characteristics → Most abundant blood cells, phagocytic

Scan or tap for the full solution



Q.176 The figure shows an axon terminal and synapse. Select the option giving correct identification of labels A-D.

[NEET 2013 (Karnataka)]



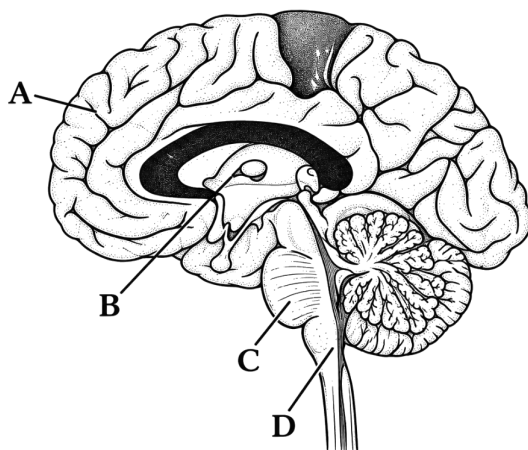
- (1) C-Receptor, D-Synaptic vesicles
- (2) A-Axon terminal, B-Serotonin complex
- (3) A-Action potential, C-Neurotransmitter
- (4) B-Neurotransmitter, D-Receptor capsules

Scan or tap for the full solution



Q.177 A sagittal section of human brain is shown here. Identify at least two labels from A-D.

[NEET 2013 (Karnataka)]



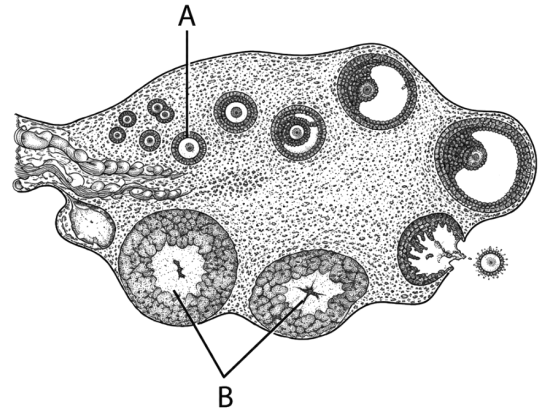
- (1) A-Cerebral hemispheres, B-Cerebellum
- (2) B-Corpus callosum, D-Medulla
- (3) C-Mid brain, D-Cerebellum
- (4) A-Cerebrum, C-Pons

Scan or tap for the full solution



Q.178 The figure shows a section of human ovary. Select the option which gives the correct identification of either A or B with function/ characteristic.

[NEET 2013 (Karnataka)]



- (1) A- Tertiary follicle - Forms Graafian follicle
- (2) B- Corpus luteum - Secretes progesterone
- (3) A- Primary oocyte - It is in the prophase I of the meiotic division
- (4) B- Corpus luteum - Secretes estrogen

Scan or tap for the full solution



Q.179 A healthy person eats the following diet – 5 g raw sugar, 4 g albumin, 10 g pure buffalo ghee adulterated with 2 g vegetable ghee (hydrogenated vegetable oil) and 5 g lignin. How many calories he is likely to get?

[NEET 2013 (Karnataka)]

- (1) 126 (2) 164 (3) 112 (4) 144

Scan or tap for the full solution



Q.180 Which enzymes are likely to act on the baked potatoes eaten by a man, starting from the mouth and as it moves down the alimentary canal?

[NEET 2013 (Karnataka)]

- (1) Pancreatic amylase → Salivary amylase → Lipases
- (2) Disaccharidase like maltase → Lipases → Nucleases
- (3) Salivary amylase → Pancreatic amylase → Disaccharidases
- (4) Salivary maltase → Carboxy peptidase → Trypsinogen

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7
Ans.	3	2	3	3	2	3	4
Ques.	8	9	10	11	12	13	14
Ans.	4	2	2	1	2	1	1
Ques.	15	16	17	18	19	20	21
Ans.	1	4	4	3	1	3	4
Ques.	22	23	24	25	26	27	28
Ans.	2	1	4	2	1	2	1
Ques.	29	30	31	32	33	34	35
Ans.	1	3	2	2	2	3	1
Ques.	36	37	38	39	40	41	42
Ans.	4	2	4	3	4	1	2
Ques.	43	44	45	46	47	48	49
Ans.	1	2	2	2	2	1	4
Ques.	50	51	52	53	54	55	56
Ans.	1	3	2	3	2	2	2
Ques.	57	58	59	60	61	62	63
Ans.	4	4	2	1	1	2	2
Ques.	64	65	66	67	68	69	70
Ans.	4	3	2	2	1	1	2
Ques.	71	72	73	74	75	76	77
Ans.	2	4	2	3	1	4	1
Ques.	78	79	80	81	82	83	84
Ans.	2	2	2	3	2	3	2
Ques.	85	86	87	88	89	90	91
Ans.	3	3	1	2	3	1	3
Ques.	92	93	94	95	96	97	98
Ans.	2	2	1	1	3	2	4
Ques.	99	100	101	102	103	104	105
Ans.	4	1	2	1	1	1	1
Ques.	106	107	108	109	110	111	112
Ans.	1	3	1	4	1	3	2
Ques.	113	114	115	116	117	118	119
Ans.	1	3	3	3	1	4	3
Ques.	120	121	122	123	124	125	126
Ans.	2	1	4	1	4	4	1
Ques.	127	128	129	130	131	132	133
Ans.	3	3	1	2	3	4	3
Ques.	134	135	136	137	138	139	140
Ans.	4	3	2	1	2	4	1
Ques.	141	142	143	144	145	146	147
Ans.	4	4	1	1	4	1	4
Ques.	148	149	150	151	152	153	154
Ans.	4	4	4	1	2	2	1
Ques.	155	156	157	158	159	160	161
Ans.	3	1	2	3	1	1	4
Ques.	162	163	164	165	166	167	168
Ans.	1	3	4	2	2	2	4
Ques.	169	170	171	172	173	174	175
Ans.	4	4	4	4	3	3	3
Ques.	176	177	178	179	180		
Ans.	1	4	2	4	3		