TS EAMCET Agriculture and Medical Mock - 1

Physics

Question 1: 00:17

If alpha, beta and gamma rays carry the same momentum, which will have the longest wavelength?

(A) Alpha rays

(B) Beta rays

(C) Gamma rays

(D) All have the same wavelength.
Correct Answer

Question 2: 00:01

The light rays having photons of energy 1.8 eV are falling on a metal surface having a work function 1.2 eV. What is the stopping potential to be applied to stop the emitting electrons?

(A) 3 V

(B) 1.2 V

(C) 0.6 V
Correct Answer

(D) 1.4 V

Question 3: 00:01

For a satellite moving in an orbit around the Earth, the ratio of kinetic energy to potential energy is:

(A) 2

(B)
Correct Answer

(C)

(D)

Question 4: 00:01

A bullet is dropped from the same height when another bullet is fired horizontally. They will hit the ground

(A) at different instants of time depending upon their masses

(B) at different instants of time depending upon their initial velocities

(C) one after another

(D) simultaneously
Correct Answer

Question 5: 00:01

The equation of stationary wave along a stretched string is given by: y = 5 sin cos 40, where x and y are in cm and t is in sec. The separation between two adjacent nodes is:

(A) 1.5 cm

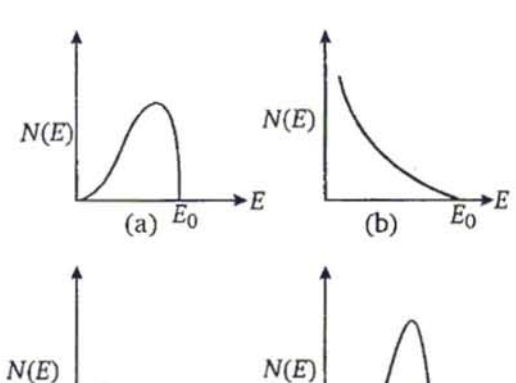
(B) 3 cm
Correct Answer

(C) 6 cm

(D) 4 cm

Question 6: 00:01

The energy spectrum of β -particles [number N(E) as a function of β -energy E] emitted from a radioactive source is represented by:



(A) (a)

(B) (b)

(C) (c)
Correct Answer

(D) (d)

Question 7: 00:01

A boat of mass 40 kg is at rest. A dog of mass 4 kg moves in the boat with a velocity of 10 m/s. What is the velocity of the boat?

(A) 4 m/s

(B) 2 m/s

(C) 5 m/s

(D) 1 m/s
Correct Answer

Question 8: 00:01

An optician prescribes spectacles to a patient with a combination of a convex lens of focal length 40 cm and concave lens of focal length 25 cm. The power of the spectacles is:

(A) 6.0 D

(B) 1.5 D

(C) -6.0 D

(D) -1.5 D
Correct Answer

Question 9: 00:01

In which of the following systems will the radius of the first orbit (n = 1) be minimum?

(A) Deuterium atom

(B) Hydrogen atom

(C) Doubly ionised lithium
Correct Answer

(D) Singly ionised helium

Question 10: 00:01

A 100 W, 200 V bulb is connected to a 160 V supply. The actual power consumption would be:

(A) 185 W

(B) 100 W

(C) 54 W

(D) 64 W
Correct Answer

Question 11: 00:01

A wire is cut into four pieces, which are put together by sides to obtain one conductor. If the original resistance of wire was R, the resistance of the bundle will be:

(A) $\frac{R}{4}$

(B) $\frac{R}{8}$

(C) $\frac{R}{16}$
Correct Answer

(D) $\frac{R}{32}$

Question 12: 00:01

A circular disc is rotating with angular velocity . If a man standing at the edge of the disc walks towards its centre, then the angular velocity of the disc

(A) is not changed

(B) be halved

(C) decreases

(D) increases
Correct Answer

Question 13: 00:01

A charge Q is distributed uniformly in a sphere (solid). Then, the electric field at any point r, where r < R (R is the radius of the sphere) varies as:

(A) $r^{1/2}$

(B) r^{-1}

(C) r
Correct Answer

(D) r^{-2}

Question 14: 00:01

Two solid spheres *A* and *B* made of the same material have radii r_A and r_B, respectively. Both the spheres are cooled from the same temperature under the conditions valid for Newton's law of cooling. The ratio of the rates of change of temperatures of *A* and *B* is:

(A) $\frac{r_A}{r_B}$

(B) $\frac{r_B}{r_A}$
Correct Answer

(C) $\frac{r_A^2}{r_B^2}$

(D) $\frac{r_B^2}{r_A^2}$

Question 15: 00:01

A point object is 24 cm above the surface of water (= 4/3) in lake. A fish inside the water will observe the image to be at a point

(A) 6 cm above the surface of water

(B) 6 cm below the surface of water

(C) 18 cm above the surface of water

(D) 32 cm above the surface of water
Correct Answer

Question 16: 00:01

A person is observing two trains, one coming towards him and other leaving with the same velocity 4 m/s. If their whistling frequencies are 240 Hz each, then the number of beats per second heard by the person will be: (Velocity of sound is 320 m/s.)

(A) 3

(B) 6
Correct Answer

(C) 9

(D) Zero

Question 17: 00:01

A perfect gas is found to obey the relation $PV^{3/2}$ = constant during an adiabatic process. If such a gas, initially at a temperature T, is compressed to half of its initial volume, then its final temperature will be:

(A) 2T

(B) 4T

(C) $(2)^{1/2}T$
Correct Answer

(D) $2(2)^{1/2}T$

Question 18: 00:01

Speed of a ball of 2 cm radius in a viscous liquid is 20 cm/s. Then, the speed of a ball of 1 cm radius in the same liquid is:

(A) 80 cm/s

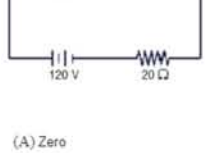
(B) 40 m/s

(C) 10 cm/s

(D) 5 cm/s
Correct Answer

Question 19: 00:01

In the circuit shown in the figure, the potential difference between *X* and *Y* will be:



(A) Zero

(B) 20 V

(C) 60 V

(D) 120 V
Correct Answer

Question 20: 00:01

For inelastic collision between two spherical rigid bodies,

(A) the total kinetic energy is conserved

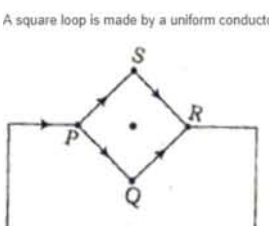
(B) the total mechanical energy is not conserved

(C) the linear momentum is not conserved

(D) the linear momentum is conserved
Correct Answer

Question 21: 00:01

A square loop is made by a uniform conductor wire as shown in the figure:



What is the net magnetic field at the centre of the loop, if side length of the square is 'a'?

(A) $\frac{\mu_0 i}{2a}$

(B) Zero
Correct Answer

(C) $\frac{\mu_0 i^2}{a^2}$

(D) None of these

Question 22: 00:01

A choke is preferred to a resistance for limiting current in AC circuit because

(A) choke is cheap

(B) there is no wastage of power
Correct Answer

(C) choke is compact in size

(D) choke is a good absorber of heat

Question 23: 00:01

A given mass of a gas is compressed isothermally until its pressure is doubled. It is then allowed to expand adiabatically until its original volume is restored, and its pressure is then found to be 0.75 of its initial pressure. The ratio of the specific heats of the gas is approximately:

(A) 1.20

(B) 1.41
Correct Answer

(C) 1.67

(D) 1.83

Question 24: 00:01

A solenoid 1.5 m long and 0.4 cm in diameter possesses 10 turns per cm length. A current of 5 A falls through it. The magnetic field at the axis inside the solenoid is:

(A) $2\pi \times 10^{-3}$ T

Correct Answer

(B) $2\pi \times 10^{-5}$ T

(C) $4\pi \times 10^{-2}$ T

(D) $4\pi \times 10^{-3}$ T

Question 25: 00:01

The optical length of an astronomical telescope with magnifying power of 10, for normal vision, is 44 cm. What is the focal length of the objective?

(A) 4 cm

(B) 40 cm
Correct Answer

(C) 44 cm

(D) 440 cm

Question 26: 00:01

A beam of light of wavelength 600 nm from a distant source falls on a single slit 1 mm wide and the resulting diffraction pattern is observed on a screen 2 m away. The distance between the first dark fringes on either side of the central bright fringe is:

(A) 1.2 cm

(B) 1.2 mm

(C) 2.4 cm

(D) 2.4 mm
Correct Answer

Question 27: 00:01

A car starts from rest, moves with an acceleration *a* and then decelerates at a constant rate *b* for sometimes to come to rest. If the total time taken is t, the maximum velocity of the car is given by:

(A)
Correct Answer

(B)

(C)

(D)

Question 28: 00:01

In nuclear reactions, there is conservation of

(A) momentum

(B) mass

(C) energy

(D) All of these
Correct Answer

Question 29: 00:01

Pressure gradient has the same dimensions as those of

(A) velocity gradient

(B) potential gradient

(C) energy gradient

(D) None of these
Correct Answer

Question 30: 00:01

The density of a newly discovered planet is twice that of the Earth. The acceleration due to gravity at the surface of the planet is equal to that at the surface of the Earth. If the radius of the Earth is R, the radius of the planet would be:

(A) $2R$

(B) $4R$

(C) R

(D) R
Correct Answer

Question 31: 00:01

To convert a galvanometer into voltmeter, we must connect a

(A) high resistance in series
Correct Answer

(B) low resistance in parallel

(C) high resistance in parallel

(D) low resistance in series

Question 32: 00:01

When a low flying aircraft passes over head, we sometimes notice a slight shaking of the picture on our TV screen. This is due to

(A) diffraction of the signal received from the antenna

(B) interference of the direct signal received by the antenna with the weak signal reflected by the passing aircraft
Correct Answer

(C) change of magnetic flux occurring due to the passage of aircraft

(D) vibration created by the passage of aircraft

Question 33: 00:01

A Gaussian sphere encloses an electric dipole within it. The total flux across the sphere is

(A) zero
Correct Answer

(B) half that due to a single charge

(C) double that due to a single charge

(D) dependent on the position of the dipole

Question 34: 00:01

A river is flowing from west to east with a velocity of 5 m/min. A man can swim in still water with a velocity of 10 m/min. In which direction should the man swim so as to take the shortest possible path to go to the south direction?

(A) 30° west of south
Correct Answer

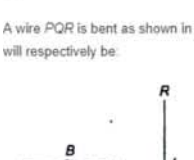
(B) 30° east of south

(C) 60° west of south

(D) 30° west of north

Question 35: 00:01

A wire *PQR* is bent as shown in the figure and is placed in a region of uniform magnetic field *B*. The length of *PQ* = length of *QR* = ℓ. A current/ampere flows through the wire as shown. The magnitudes of the forces on *PQ* and *QR* will respectively be



(A) $BI\ell$, 0

(B) $2BI\ell$, 0

(C) 0, $BI\ell$
Correct Answer

(D) 0, 0

Question 36: 00:01

The dimensions of Planck's constant are:

(A) $[ML^{-3}T^{-2}]$

(B) $[ML^{-2}T^{-1}]$

(C) $[ML^{2}T^{-3}]$

(D) $[ML^{2}T^{-1}]$
Correct Answer

Question 37: 00:01

A block is kept on the floor of an elevator at rest. The elevator starts descending with an acceleration of 12 m/s^2. Find the displacement of the block during the first 0.2 s after the start. (Take g = 10 m/s^2)

(A) 30 cm

(B) Zero

(C) 20 cm
Correct Answer

(D) 25 cm

Question 38: 00:01

A galvanometer having a resistance of 8 is shunted by a wire of resistance 2 . If the total current is 1 A, the part of it passing through the shunt will be:

(A) 0.25 A

(B) 0.8 A
Correct Answer

(C) 0.2 A

(D) 0.5 A

Question 39: 00:01

Two planets are revolving around the Earth with velocities v_1 and v_2 and in radii r_1 and r_2 ($r_1 > r_2$) respectively. Then,

(A) $v_1 = v_2$

(B) $v_1 > v_2$

(C) $v_1 < v_2$
Correct Answer

(D) $\frac{v_1}{r_1} = \frac{v_2}{r_2}$

Question 40: 00:01

A body goes 20 km due north and then 10 km due east. The displacement of the body from its starting point is:

(A) 30 km

(B) 25.2 km

(C) 22.36 km
Correct Answer

(D) 10 km

Chemistry

Question 1: 00:01

identified as

(A) 2, 4, 6-tribromophenol

(B) 2-bromo-4-hydroxyl benzene sulphonic acid

(C) 3, 5-dibromo-4- hydroxyl benzene sulphonic acid
Correct Answer

(D) 2-bromophenol

Question 2: 00:01

Schiff's reagent is

(A) red litmus

(B) rosaniline hydrochloride
Correct Answer

(C) methyl orange

(D) 2, 4 dinitrophenyl hydrazine

Question 3: 00:01

Containers A and B have same gases. Pressure, volume and temperature of A are all twice those of B. Then, the ratio of the number of molecules of A and B is

(A) 1 : 2

(B) 2 : 1
Correct Answer

(C) 1 : 4

(D) 4 : 1

Question 4: 00:01

On reduction with hydrogen, 3.6 g of an oxide of a metal left 3.2 g of the metal. If the vapour density of the metal was 32 g/L, then the simplest formula of the oxide would be

(A) MO

(B) M_2O_3

(C) M_2O
Correct Answer

(D) M_2O_5

Question 5: 00:01

The vapour pressure of acetone at 20°C is 185 torr. When 1.2 g of a non-volatile substance is dissolved in 100 g of acetone at 20°C, its vapour pressure becomes 183 torr. The molar mass (g mol^{-1}) of the substance is

(A) 32

(B) 64
Correct Answer

(C) 128

(D) 488

Question 6: 00:01

The product obtained by the reaction of an aldehyde and a hydroxylamine is

(A) hydrazone

(B) aldoxime
Correct Answer

(C) primary amine

(D) alcohol

Question 7: 00:01

Which one of the following elements has the highest ionisation energy?

(A) $[Ne]3s^2, 3p^1$

(B) $[Ne]3s^2, 3p^2$

(C) $[Ne]3s^2, 3p^3$
Correct Answer

(D) $[Ar]3d^{10}, 4s^2, 4p^2$

Question 8: 00:01

Transition metals show paramagnetic behaviour. This is because of their

(A) high lattice energies

(B) variable oxidation states

(C) characteristic configurations

(D) unpaired electrons
Correct Answer

Question 9: 00:01

Acetyl bromide reacts with excess of CH_3MgI, followed by treatment with a saturated solution of NH_4Cl, to give

(A) acetone

(B) acetamide

(C) 2-methyl-2-propanol
Correct Answer

(D) acetyl iodide

Question 10: 00:01

Which is the strongest oxidising agent?

(A) Na^+

(B) Li^+

(C) Zn^{2+}

(D) Cu^{2+}
Correct Answer

Question 11: 00:01

Which of the following forms a molecular solid?

(A) SO_2
Correct Answer

(B) SiO_2

(C) SiC

(D) Diamond

Question 12: 00:01

Both BF_3 and NF_3 are covalent, but BF_3 molecule is non-polar while NF_3 is polar because

(A) the atomic size of boron is smaller than that of nitrogen

(B) BF_3 is planar but NF_3 is pyramidal
Correct Answer

(C) boron is a metalloid while nitrogen is a non-metallic gas

(D) B-F bond is non-polar but N-F bond is polar

Question 13: 00:01

The pair, in which both the species have iron, is

(A) nitrogenase, cytochromes

(B) carboxypeptidase, haemoglobin

(C) haemocyanin, nitorogenase

(D) haemoglobin, cytochromes
Correct Answer

Question 14: 00:01

The solubility product of a salt, having general formula MX_2, in water is 4×10^{-12}. The concentration of M^{2+} ions in the saturated aqueous solution of the salt is

(A) 4.0×10^{-10} M

(B) 1.6×10^{-4} M

(C) 1.0×10^{-4} M
Correct Answer

(D) 2.0×10^{-6} M

Question 15: 00:01

Arrange the following in increasing order of acidity.

H_2O_2, H_2O and CO_2

(A) $H_2O_2 > H_2O > CO_2$

(B) $H_2O_2 > CO_2 > H_2O$

(C) $H_2O > H_2O_2 > CO_2$

(D) $H_2O < H_2O_2 < CO_2$
Correct Answer

Question 16: 00:01

The number of possible isomers of an octahedral complex $[Co(C_2O_4)_2 (NH_3)_2]^-$ is

(A) 1

(B) 2

(C) 3
Correct Answer

(D) 4

Question 17: 00:01

Bohr's theory is not applicable to

(A) H

(B) He^+

(C) Li^{2+}

(D) H^+

Correct Answer

Question 18: 00:01

$H_2 + Cl_2 \rightarrow 2HCl$, $\Delta H = -194$ kJ
In the above reaction, the heat of formation of HCl is

(A) +97 kJ

(B) -97 kJ

Correct Answer

(C) +107 kJ

(D) -107 kJ

Question 19: 00:01

Observe the following reaction:
$2A + B \rightarrow C$
The rate of formation of C is 2.2×10^{-3} mol L min^{-1}.

What is the value of -(in mol L^{-1} mm^{-1})?

(A) 2.2×10^{-3}

(B) 1.1×10^{-3}

(C) 4.4×10^{-3}

Correct Answer

(D) 5.5×10^{-3}

Question 20: 00:01

Mg and Li are similar in their properties due to

(A) same e/m ratio

(B) same electron affinity

(C) same group

(D) same ionic potential

Correct Answer

Question 21: 00:01

Time required to deposit one millimole of aluminium metal by the passage of 9.65 A through aqueous solution of aluminium ion is

(A) 30 s

Correct Answer

(B) 10 s

(C) 30,000 s

(D) 10,000 s

Question 22: 00:01

Bessemer converter is used for the preparation of

(A) steel

(A) steel

Correct Answer

(B) wrought iron

(C) pig iron

(D) cast iron

Question 23: 00:01

The compounds of alkaline earth metals have the following magnetic nature:

(A) Diamagnetic

Correct Answer

(B) Paramagnetic

(C) Ferromagnetic

(D) Antiferromagnetic

Question 24: 00:01

For a linear plot of log (x/m) versus log p in a Freundlich adsorption isotherm, which of the following statements is correct? (k and n are constants)

(A) Both k and 1/n appear in the slope term.

(B) 1/n appears as the intercept.

(C) Only 1/n appears as the slope.

Correct Answer

(D) log (1/n) appears as the intercept.

Question 25: 00:01

What is *X* in the following reaction?

$KHSO_4 + F_2 \longrightarrow HF + X$

(A) K_2SO_4

(B) $K_2S_2O_4$

(C) $K_2S_2O_3$

(D) $K_2S_2O_8$

Correct Answer

Question 26: 00:01

The number of unpaired electrons in ferrous ion is

(A) 3

(B) 2

(C) 4
Correct Answer

(D) 5

Question 27: 00:01

Which of the following is added to chloroform to slow down its aerial oxidation in the presence of light?

(A) Carbonyl chloride

(B) Ethyl alcohol
Correct Answer

(C) Sodium hydroxide

(D) Nitric acid

Question 28: 00:01

reacts with acetic acid in presence of Hg^{2+} to give

(A) CH_3
$CH(CH_3COO)_2$
Correct Answer

(B) $CH(CH_3COO)_2$
$CH(CH_3COO)_2$

(C) CH_3
$CH_2(CH_3COO)$

(D) None of these

Question 29: 00:01

The compound used as an antibiotic is

(A) ampicillin
Correct Answer

(B) aspirin

(C) sulphuryl

(D) chloroquine

Question 30: 00:01

The density of a gas is found to be 1.56 g/L at 745 mm pressure and 65◆C. What is the molecular mass of the gas?

(A) 44.2 u
Correct Answer

(B) 4.42 u

(C) 2.24 u

(D) 22.4 u

Question 31: 00:01

The standard e.m.f. of a galvanic cell, involving cell reaction with n = 2, was found to be 0.295 V at 25°C. The equilibrium constant of the reaction would be

(A) $2 \ 10^{11}$

(B) $4 \ 10^{12}$

(C) $1 \ 10^{2}$

(D) $1 \ 10^{10}$
Correct Answer

Question 32: 00:01

The chloroform reacts with KOH and methyl amine to give

(A) CH_3COOK

(B) $C_2K_2O_4$(Potassium oxalate)

(C) CH_3NC
Correct Answer

(D) CH_3CN

Question 33: 00:01

Which among the following is a colloid?

(A) Urea

(B) Blood
Correct Answer

(C) Cane sugar

(D) NaCl

Question 34: 00:01

The most reactive nucleophile is

(A) CH_3O^-

(B) $C_6H_5O^-$

(C) $(CH_3)_2CHO^-$

(D) $(CH_3)_3CO^-$
Correct Answer

Question 35: 00:01

The most abundant metal in the earth's crust is:

(A) Al
Correct Answer

(B) Na

(C) Ca

(D) Fe

Question 36: 00:01

Which of the following polymerisation processes will **not** result into the formation of a condensation polymer?

(A) n (Ethylene glycol) + n (Phthalic acid)

(B) n (1,3–Butadiene) + n (Styrene)
Correct Answer

(C) n (Hexamethylenediamine) + n (Adipic acid)

(D) n (Ethylene glycol) + n (Terephthalic acid)

Question 37: 00:01

For decolourisation of 1 mole of $KMnO_4$, the number of moles of H_2O_2 required is

(A) 1/2

(B) 3/2

(C) 5/2
Correct Answer

(D) 7/2

Question 38: 00:01

Which of the following options is arranged in the increasing order of enthalpy of vaporisation?

(A) NH_3, PH_3, AsH_3

(B) AsH_3, PH_3, NH_3

(C) NH_3, AsH_3, PH_3

(D) PH_3, AsH_3, NH_3
Correct Answer

Question 39: 00:01

The catalyst used in the preparation of an alkyl chloride by the action of dry HCl on an alcohol is

(A) anhydrous $AlCl_3$

(B) $FeCl_3$

(C) anhydrous $ZnCl_2$
Correct Answer

(D) Cu

Question 40: 00:01

The energy equivalent of 2.0 mg mass defect is

(A) 1.8×10^4 erg

(B) 9×10^{-19} erg

(C) 1.5×10^{20} erg

(D) 1.8×10^{18} erg
Correct Answer

Biology

Question 1: 00:01

Which of the following is/are used for poisoning of herbarium sheet?

(A) $HgCl_2$

(B) Napthalene

(C) CS_2

(D) All of the above
Correct Answer

(E) None of these

Question 2: 00:01

Cell wall is absent in which of the following?

(A) *Amoeba*
Correct Answer

(B) *Chara*

(C) *Yeast*

(D) *E. coli*

Question 3: 00:01

The most important function of diaphragm is

(A) to aid in digestion

(B) to aid in respiration
Correct Answer

(C) to protect lungs

(D) to divide body cavity into compartments

Question 4: 00:01

What is wheat germ called?

(A) Coleoptile
Correct Answer

(B) Cotyledon

(C) Embryo

(D) Endosperm

Question 5: 00:01

Carbohydrates, the most abundant biomolecules on the earth, are produced by

(A) all bacteria, fungi and algae

(B) fungi, algae and green plant cells

(C) some bacteria, algae and green plant cells
Correct Answer

(D) viruses, fungi and bacteria

Question 6: 00:01

Schwann cell is found around

(A) axon
Correct Answer

(B) dendrite

(C) cyton

(D) dendron

Question 7: 00:01

Match the following:

P. Spirogyra	1. Vegetative propagation
Q. Rose	2. Fragmentation
R. Planaria	3. Sexual reproduction
S. Human	4. Regeneration

(A) P - 1, Q - 3, R - 2, S - 4

(B) P - 3, Q - 4, R - 1, S - 2

(C) P - 2, Q - 1, R - 4, S - 3
Correct Answer

(D) P - 4, Q - 2, R - 3, S - 1

(E) P - 2, Q - 4, R - 3, S - 1

Question 8: 00:01

Birds are

(A) cold blooded

(B) homeothermal
Correct Answer

(C) poikilothermal

(D) None of these

Question 9: 00:01

In a cell cycle, during which phase chromosomes are arranged in equatorial plate?

(A) Metaphase
Correct Answer

(B) Anaphase

(C) Telophase

(D) Prophase

Question 10: 00:01

Tadpole's tail is a/an

(A) excretory organ

(B) attachment organ

(C) respiratory organ

(D) locomotory organ
Correct Answer

Question 11: 00:01

The raising of new plants from a plant tissue through tissue culture is termed as

(A) micro-propagation
Correct Answer

(B) micro-grafting

(C) macro-economic

(D) macro-consumer

Question 12: 00:01

Which of the following is important for speciation?

(A) Seasonal isolation

(B) Reproductive isolation
Correct Answer

(C) Behavioural isolation

(D) Temporal isolation

Question 13: 00:01

Which of the following are secreted by bacteria?

(A) Proteins

(B) Toxins
Correct Answer

(C) Interferons

(D) Antibiotics

Question 14: 00:01

The length of one turn of the helix in a B-form DNA is approximately

(A) 0.34 nm

(B) 20 nm

(C) 2 nm

(D) 3.4 nm
Correct Answer

Question 15: 00:01

In 1984, the Bhopal gas tragedy took place because methyl isocyanate

(A) reacted with DDT

(B) reacted with ammonia

(C) reacted with CO_2

(D) reacted with water

Correct Answer

Question 16: 00:01

The quiescent centre in root meristem serves as a

(A) site for storage of food which is utilised during maturation

(B) reservoir of growth hormones

(C) reserve for replenishment of damaged cells of the meristem

Correct Answer

(D) region for absorption of water

Question 17: 00:01

According to the World Health Organisation (WHO), which of the following is not considered as an aspect of reproduction?

(A) Social aspect

(B) Behavioural aspect

(C) Emotional aspect

(D) Political aspect

Correct Answer

(E) Physical aspect

Question 18: 00:01

Meniere's disease is associated with

(A) ear

Correct Answer

(B) eye

(C) nose

(D) throat

Question 19: 00:01

What would happen if in a gene encoding, a polypeptide of 50 amino acids, 25th codon (UAC) is mutated to UAA?

(A) A polypeptide of 49 amino acids will be formed.

(B) A polypeptide of 25 amino acids will be formed.

(C) A polypeptide of 24 amino acids will be formed.

Correct Answer

(D) Two polypeptides of 24 and 25 amino acids will be formed.

Question 20: 00:01

During the process of evolution, development of trichogyne of algae could be traced as

(A) style of angiosperm

Correct Answer

(B) stigma of angiosperm

(C) gynoecium of angiosperm

(D) pollen tube of angiosperm

Question 21: 00:01

Below freezing point, the pepsin

(A) becomes over activated

(B) gets destroyed

(C) remains unaffected

(D) gets inactivated
Correct Answer

Question 22: 00:01

'Hotspots of biodiversity' mean

(A) species in a particular area

(B) areas of the earth that contain many endemic species
Correct Answer

(C) species diversity at a particular area

(D) species serve as proxy for entire communities in a particular area

(E) None of these

Question 23: 00:01

In diastole, heart is filled by

(A) mixed blood

(B) venous blood
Correct Answer

(C) oxygenated blood

(D) partially oxygenated blood

Question 24: 00:01

What is *Bacillus thuringiensis*?

(A) It is an inorganic pesticide G positive bacterium.

(B) It is an organic pesticide G positive bacterium.

(C) It is an organic pesticide G negative bacterium.

(D) It is a biological pesticide G positive bacterium.
Correct Answer

(E) It is a biological pesticide G negative bacterium.

Question 25: 00:01

Dudhwa National Park is located in

(A) Arunachal Pradesh

(B) Madhya Pradesh

(C) Uttar Pradesh
Correct Answer

(D) Himachal Pradesh

Question 26:

00:01

Which of the following pairs is not correctly matched?

(A) Vitamin B_{12} – Pernicious anaemia

(B) Vitamin B_6 – Loss of appetite

(C) Vitamin B_1 – Beriberi

(D) Vitamin B_2 – Pellagra

Correct Answer

Question 27:

00:01

Gamma globulin are synthesised inside

(A) liver

(B) kidney

(C) bone marrow

(D) lymph and lymphoid tissue

Correct Answer

Question 28:

00:01

Which of the following micronutrients is vital for pollen germination?

(A) Mg

(B) B
Correct Answer

(C) Zn

(D) Mo

(E) Cu

Question 29: 00:01

Into which of the following is the foreign DNA inserted for cloning purpose?

(A) In target vector

(B) In cloning vector
Correct Answer

(C) In viruses

(D) In archaebacteria

(E) In eukaryotic protista

Question 30: 00:01

The Government of India, along with 155 other nations, signed a conservation strategy at the Earth Summit held at Rio de Janeiro, Brazil in June 1992. What is this conservation strategy called?

(A) Wildlife Protection Act

(B) Convention on Biodiversity
Correct Answer

(C) Mega Diversity Convention

(D) The Biological Act

(E) Conservation of Biodiversity Act

Question 31: 00:01

Organisms of related families are kept together in which of the following?

(A) Order
Correct Answer

(B) Kingdom

(C) Genus

(D) Phylum or Division

(E) Species

Question 32:

00:01

Which of the following stages during meiosis is concerned with DNA replication?

(A) Interphase
Correct Answer

(B) Prophase

(C) Metaphase

(D) Anaphase

Question 33:

00:01

Drosophila flies with XXY genotype are females, but human beings with such genotype are abnormal males. It shows that

(A) Y-chromosome is essential for sex determination in Drosophila

(B) Y-chromosome is female determining in Drosophila

(C) Y-chromosome is male determining in human beings
Correct Answer

(D) Y-chromosome has no role in sex detemination either in Drosophila or in human beings

Question 34:

00:01

An organic substance bound to an enzyme and essential for its activity is called

(A) coenzyme
Correct Answer

(B) holoenzyme

(C) apoenzyme

(D) isoenzyme

Question 35:

00:01

Match the following:

1	Lipase	a	In bottled juices

2	Pectinase	b	To remove clots
3	Streptokinase	c	In laundry detergents

(A) 1 - a, 2 - c, 3 - b

(B) 1 - b, 2 - c, 3 - a

(C) 1 - c, 2 - a, 3 - b
Correct Answer

(D) 1 - c, 2 - b, 3 - a

(E) 1 - b, 2 - a, 3 - c

Question 36:

00:01

Formation of ozone hole is maximum over

(A) India

(B) Antarctica
Correct Answer

(C) Europe

(D) Africa

Question 37:

00:01

Which of the following is true with respect to gametophyte of ferns?

(A) Prothallus is independent from sporophyte.
Correct Answer

(B) Prothallus is attached with sporophyte.

(C) It is the main plant body.

(D) It is a structure attached with rhizome.

Question 38:

00:01

Both corpus luteum and macula lutea are

(A) found in human ovaries

(B) sources of hormones

(C) characterised by yellow colour
Correct Answer

(D) contributors in maintaining pregnancy

Question 39:

00:01

Antigen binding site in an antibody is found between

(A) two light chains

(B) two heavy chains

(C) one heavy and one light chains

Correct Answer

(D) either between two light chains or between one heavy and one light chains, depending upon the nature of antigen

Question 40:

00:01

In living beings, ammonia is converted into urea through

(A) ornithine cycle

Correct Answer

(B) citrulline cycle

(C) fumarine cycle

(D) arginine cycle

Question 41:

00:01

If a plant having yellow or round seeds was crossed with another plant having green and wrinkled seeds, then F_1 progeny are in the ratio

(A) 15 : 1

(B) 1 : 15

(C) 1 : 13

(D) None of these as we get all yellow and round seeds

Correct Answer

Question 42:

00:01

The national herbarium of our country is located in the Indian Botanical Garden, which is located in

(A) Kolkata

Correct Answer

(B) Ooty

(C) Bangalore

(D) Mumbai

Question 43:

00:01

The specific part of plastid where photosynthetic pigment occurs is

(A) grana

(B) stroma

(C) lamellae

(D) thylakoid membrane
Correct Answer

(E) None of these

Question 44:

00:01

Cellulose, the most important constituent of a plant cell wall is made up of

(A) branched chain of glucose molecules linked by α, 1, 6 glycosidic bond, the site of branching

(B) unbranched chain of glucose molecules linked by α, 1, 4, glycosidic bond

(C) branched chain of glucose molecules linked by β, 1, 4 glycosidic bond in straight chain and α, 1, 6 glycosidic bond at the site of branching

(D) unbranched chain of glucose molecules linked by β, 1, 4 glycosidic bond
Correct Answer

Question 45:

00:01

Which of the following is not a vestigial part in humans?

(A) Coccyx

(B) Finger nail
Correct Answer

(C) Third molar of each side in each jaw

(D) Segmental muscle of abdomen

Question 46:

00:01

What is the name of alpha-lactalbumin producing transgenic animal?

(A) Rosie

Correct Answer

(B) Pratham

(C) Dolly

(D) Garima

(E) Enviropig

Question 47: 00:01

The term 'lotic' is used for

(A) all kinds of water

(B) pond water

(C) stagnant fresh water

(D) fresh flowing water
Correct Answer

(E) None of the above

Question 48: 00:01

Photochemical smog formed in congested metropolitan cities mainly consists of

(A) ozone, peroxyacetyl nitrate and NO_x
Correct Answer

(B) smoke, peroxyacetyl nitrate and SO_2

(C) hydrocarbons, SO_2 and CO_2

(D) hydrocarbons, ozone and SO_x

Question 49: 00:01

In Mollusca, eye is present over a stalk called

(A) ostracum

(B) operculum

(C) ommatophore
Correct Answer

(D) osphradium

Question 50:

00:01

What is the fifth cranial nerve of a frog called?

(A) Vagus

(B) Trigeminal
Correct Answer

(C) Optic

(D) Olfactory

Question 51:

00:01

Lungs are enclosed in

(A) pericardium

(B) peritonium

(C) pleural membrane
Correct Answer

(D) None of the above

Question 52:

00:01

Which of the following hormones plays an important role in osmoregulatory function of kidneys by increasing Na^+, K^+ and Cl^- reabsorption from filtrate?

(A) LH

(B) Oxytocin

(C) Vasopressin

(D) Aldosterone
Correct Answer

(E) Parathormone

Question 53:

00:01

Which of the following is a globular protein which makes the active sites of F-actin?

(A) Troponin
Correct Answer

(B) Tropomyosin

(C) Myosin

(D) Heavy meromyosin

(E) Light meromyosin

Question 54:

00:01

Somaclonal variation appears in

(A) organisms produced through somatic hybridisation

(B) plants growing in highly polluted conditions

(C) [illegible]

(C) apomictic plants

(D) tissue culture raised plants
Correct Answer

Question 55: 00:01

Which part of embryo comes out first during seed germination?

(A) Radicle
Correct Answer

(B) Plumule

(C) Hypocotyl

(D) Epicotyl

Question 56: 00:01

Which of the following contraceptives was developed by scientists at the Central Drug Research Institute (CDRI) in Lucknow, India?

(A) Progestasert

(B) Saheli
Correct Answer

(C) CuT

(D) LNG-20

(E) Multiload 375

Question 57: 00:01

Which of the following sets of derivatives of integumentary structures characterised birds as glorified reptiles?

(A) Syrinx and uropygial glands

(B) Claws arn uropygial glands

(C) Scales and claws
Correct Answer

(D) Syrinx and scales

Question 58: 00:01

Which of the following represents the basal part of the ovule and is opposite to the micropylar end?

(A) Hilum

(B) Chalaza
Correct Answer

(C) Funicle

(D) Integument

(E) Micropyle

Question 59: 00:01

Which of the following four glands is correctly matched with the accompanying description?

(A) Thyroid – hyperactivity in young children causes cretinism

(B) Thymus – starts undergoing atrophy after puberty
Correct Answer

(C) Parathyroid – secretes parathormone which promotes movement of calcium ions from blood into bones during calcification

(D) Pancreas – delta cells of the islets of Langerhans secrete a hormone which stimulates glycolysis in liver

Question 60: 00:01

Viscum is a

(A) total root parasite

(B) total stem parasite

(C) partial root parasite

(D) partial stem parasite
Correct Answer

Question 61: 00:01

Sea weeds are important source of

(A) chlorine

(B) fluorine

(C) iodine
Correct Answer

(D) bromine

Question 62: 00:01

Which compound has a very important role in prebiotic evolution?

(A) Sulphur dioxide

(B) Nitric oxide

(C) Methane
Correct Answer

(D) Sulphur trioxide

Question 63: 00:01

All Bowman's capsules of the kidney are found in

(A) pelvis

(B) medulla

(C) cortex
Correct Answer

(D) None of these

Question 64: 00:01

In which of the following is blue-green alga found?

(A) Cycas
Correct Answer

(B) Pinus

(C) Scales of Marchantia

(D) Riccia

Question 65: 00:01

Match **column I** with **column II** and choose the correct option.

	Column I	Column II
A.	Carcinogen	1. Cancerous tumour
B.	Anaphase-I	2. Dis-junction
C.	Mitosis	3. Synapse
D.	Zygotene	4. Plectonemic coiling

	Codes			
	A	B	C	D
(1)	1	2	4	3
(2)	3	1	4	2
(3)	2	3	1	4
(4)	4	1	3	2

(A) (1)
Correct Answer

(B) (2)

(C) (3)

(D) (4)

Question 66: 00:01

The usage of binomial names for plant species was accepted by all after the publication of the work by

(A) Hooker

(B) Linnaeus
Correct Answer

(C) Bentham

(D) Darwin

Question 67: 00:01

Damage to thymus in a child may lead to

(A) a reduction in haemoglobin content of blood

(B) a reduction in stem cell production

(C) loss of antibody mediated immunity

(D) loss of cell mediated immunity
Correct Answer

Question 68: 00:01

The distinguishing feature of all chordates is

(A) a water vascular system

(B) an elastic rod (notochord)
Correct Answer

(C) a chitinous exoskeleton

(D) a ventrally placed nerve cord

Question 69: 00:01

Haematocrit is related with

(A) erythrocyte volume fraction
Correct Answer

(B) oxygen carrying capacity of haemoglobin

(C) cell volume when packed together

(D) amount of Hb/100 ml of blood

Question 70: 00:01

The phenomenon of 'Industrial Melanism' demonstrates

(A) reproductive isolation

(B) geographical isolation

(C) induced mutation

(D) natural selection
Correct Answer

Question 71: 00:01

Theory of pangenesis was given by

(A) Darwin
Correct Answer

(B) Lamarck

(C) Hugo de Vries

(D) Oparin

Question 72: 00:01

In a dicotyledonous stem, the sequence of tissues from the outside to the inside is

(A) phellem-pericycle-endodermis-phloem

(B) phellem-phloem-endodermis-pericycle

(C) phellem-endodermis-pericycle-phloem
Correct Answer

(D) pericycle-phellem-endodermis-phloem

Question 73: 00:01

Which type of enzyme is present in lysosome?

(A) ATPase

(B) Hydrolytic
Correct Answer

(C) Lyase

(D) None of these

Question 74: 00:01

Which type of cell division occurs in somatic cells?

(A) Mitosis
Correct Answer

(B) Meiosis

(C) Both (1) and (2)

(D) None of these

Question 75: 00:01

In pea plants, yellow seeds are dominant to green. If a heterozygous yellow seeded plant is crossed with a green seeded plant, what ratio of yellow to green seeded plants could you expect in F_1 generation?

(A) 9 : 1

(B) 1 : 3

(C) 3 : 1

(D) 50 : 50
Correct Answer

Question 76: 00:01

Which of the following statements pertaining to pollutants is correct?

(A) DDT is a non-biodegradable pollutant.
Correct Answer

(B) Excess fluoride in drinking water causes osteoporosis.

(C) Excess cadmium in drinking water causes black foot disease.

(D) Methylmercury in water may cause "Itai Itai" disease.

Question 77: 00:01

Nitrogen oxides produced from the emission of automobiles and power plants are the source of fine air borne particles which lead to

(A) photochemical smog

(B) dry acid deposition
Correct Answer

(C) industrial smog

(D) wet acid deposition

Question 78: 00:01

Which of the following is a part of endoplasmic reticulum present in plasmodesmata?

(A) Desmotubule
Correct Answer

(B) Myleoid body

(C) Desmosome

(D) Cisterna

(E) Mesosome

Question 79: 00:01

A normal woman whose father was colour blind, is married to a normal man. The sons would be

(A) 75% colour blind

(B) 50% colour blind
Correct Answer

(C) all normal

(D) all colour blind

Question 80: 00:04

Yeast belongs to which class?

(A) Basidiomycetes

(B) Ascomycetes
Correct Answer

(C) Eumycetes

(D) None of these