AIIMS B.Sc Nursing 2026 Shift 2

Question Paper

Conducted by AIIMS, New Delhi

General Instructions

(i) The test is of 2 hours duration.

(ii) This test paper consists of 100 questions with a total of 100 marks.

(iii) Marking Scheme: +1 mark for each correct answer and -1/3 mark for each incorrect answer (negative marking).

(iv) Section-wise distribution:

- Physics: 30 questions
- Chemistry: 30 questions
- Biology: 30 questions
- General Knowledge: 10 questions

PHYSICS

1. What is the dimensional formula of electric potential?

(A) $[L^2T^{-3}A^{-1}]$

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

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

(D) $[L^2T^{-2}A^{-2}]$

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2. The electron mobility in a conductor is 32 cm^2/Vs. What is the relaxation time of free electrons? (Given: $e = 1.6 \times 10^{-19}\ C$, $m = 9.1 \times 10^{-31}\ kg$)

(A) $1.82 \times 10^{-12}\ s$

(B) $2.73 \times 10^{-12}\ s$

(C) $1.82 \times 10^{-14}\, s$

(D) $2.73 \times 10^{-14}\, s$

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3. The area of an airplane wing is $A = 4\, m^2$. Air flows with velocity $v_1 = 80\, m/s$ above the wing and $v_2 = 60\, m/s$ below it. The density of air is $1.2\, kg/m^3$. Find the pressure difference (ΔP) between the upper and lower surfaces of the wing.

(A) 1200 Pa

(B) 1680 Pa

(C) 2400 Pa

(D) 3600 Pa

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4. What is the minimum wavelength in the Lyman series of the hydrogen spectrum?

(A) 91.2 nm

(B) 121.6 nm

(C) 656.3 nm

(D) 364.6 nm

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5. Two parallel wires carry equal currents of $2A$ in opposite directions. If the length of each wire is $0.5\, m$ and the distance between them is $10\, cm$, then find the force between them.

(A) $2 \times 10^{-6}\, N$

(B) $4 \times 10^{-6}\, N$

(C) $8 \times 10^{-6}\, N$

(D) $1.6 \times 10^{-5}\, N$

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6. A thin prism has an angle of 8° and a minimum deviation of 6°. Find the speed of light in the prism.

(A) $1.71 \times 10^8\, m/s$,

(B) $2.0 \times 10^8\, m/s$

(C) $2.5 \times 10^8\, m/s$

(D) $3.0 \times 10^8\, m/s$

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7. A car moves at a speed of $600\,\text{km/h}$ on a frictionless banked road with $\theta = 30^\circ$. Take $g = 10\,\text{m/s}^2$. Find the radius of the road.

(A) $2.4\,\text{km}$

(B) $3.2\,\text{km}$

(C) $4.8\,\text{km}$

(D) $6.4\,\text{km}$

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8. $L = 50\,mH$, $C = 100\,\mu F$, $R = 50\,\Omega$. What does this circuit represent? (Assume $\omega = 200\,rad/s$)

(A) Inductive circuit

(B) Capacitive circuit

(C) Resonant circuit

(D) Purely resistive circuit

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9. A sphere encloses charges $+5\,C$ and $-2\,C$, while a charge $-3\,C$ is outside the sphere. What is the electric flux through the sphere?

(A) $\dfrac{3C}{\varepsilon_0}$

(B) $-\dfrac{3C}{\varepsilon_0}$

(C) Zero

(D) $\dfrac{10C}{\varepsilon_0}$

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10. A current of $50\,mA$ flows through a loop of area $10\,cm^2$ placed in a magnetic field of $0.1\,T$. The angle between the magnetic field and the loop is 60°. Find the torque acting on the loop.

(A) $2.5 \times 10^{-5}\,Nm$

(B) $4.33 \times 10^{-5}\,Nm$

(C) $4.33 \times 10^{-6}\,Nm$

(D) $2.5 \times 10^{-6}\,Nm$

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11. A $1\,\mu F$ capacitor is charged to $12\,V$ and then connected to an identical uncharged capacitor. What will be the common potential?

(A) $12\,V$

(B) $6\,V$

(C) $3\,V$

(D) $4\,V$

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12. If the work function of a metal is $1.2\,eV$ and the stopping potential is $1.8\,V$, find the frequency of incident light on the metal surface.

(A) $4.84 \times 10^{14}\,Hz$

(B) $7.25 \times 10^{14}\,Hz$

(C) $1.45 \times 10^{14}\,Hz$

(D) $9.67 \times 10^{14}\,Hz$

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13. Which of the following statements is correct during the formation of a PN junction?

(A) Electrons diffuse from the P-region to the N-region.

(B) Holes diffuse from the N-region to the P-region.

(C) Electrons diffuse from the N-region to the P-region.

(D) Holes drift from the N-region to the P-region.

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14. A spring of force constant $K = 1000\,N/m$ is compressed by $5\,cm$. If a mass of $2.5\,kg$ is attached and released, find its speed as it passes the equilibrium position.

(A) $0.5\,m/s$

(B) $1.0\,m/s$

(C) $1.5\,m/s$

(D) $2.0\,m/s$

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15. The temperature of 2 moles of a monoatomic gas changes from $25^\circ C$ to $35^\circ C$ in an adiabatic process. Find the work done.

(A) $-249.4\,J$

(B) $+249.4\,J$

(C) $-498.8\,J$

(D) $+498.8\,J$

16. Two large, thin, parallel sheets have surface charge densities of opposite signs and equal magnitude σ. What is the magnitude of the electric field (E) in the region between the sheets?

(A) $\frac{\sigma}{2\varepsilon_0}$
(B) $\frac{\sigma}{\varepsilon_0}$
(C) Zero
(D) $\frac{2\sigma}{\varepsilon_0}$

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17. A small ball is tied to a light inextensible thread of length $64\,cm$ and is whirled in a vertical circle. If the thread is just taut at the highest point of the circle, then the minimum speed of the ball at the lowest point is: (Take $g = 10\,m/s^2$)

(A) $2.53\,m/s$
(B) $5.66\,m/s$
(C) $8.0\,m/s$
(D) $10.0\,m/s$

---

18. A thin charged spherical shell of radius $10\,cm$ has a uniform surface charge density of $20\,pC/cm^2$. The electric potential at a point $8\,cm$ from the centre of the shell is:

(A) $180\pi\,V$
(B) $360\pi\,V$
(C) $720\pi\,V$
(D) Zero

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19. Three charges $+20\,\mu C$, $+20\,\mu C$ and $-20\,\mu C$ are placed at the vertices A, B and C respectively of an equilateral triangle of side $1\,m$. Find the net force acting on the charge at vertex A.

(A) $3600\sqrt{3}\,N$
(B) $3600\,N$
(C) $7200\,N$
(D) $1800\,N$

CHEMISTRY

1. Assertion (A): The first ionization enthalpy of nitrogen is higher than that of oxygen.

Reason (R): Nitrogen has a half-filled $2p$ orbital, which is extra stable.

(A) A and R are both true, and R is the correct explanation of A.

(B) A and R are both true, but R is not the correct explanation of A.

(C) A is true, but R is false.

(D) A is false, but R is true.

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2. What will be formed when $CH_3-CH=CH_2+HBr$ reacts in the presence of peroxide?

(A) $CH_3-CH_2-CH_2-Br$ (n-propyl bromide)

(B) $CH_3-CHBr-CH_3$ (isopropyl bromide)

(C) $BrCH_2-CH=CH_2$ (allyl bromide)

(D) No reaction will occur.

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3. What is the magnetic dipole moment of Mn^{2+} $(3d^5)$?

(A) $1.73\,BM$

(B) $3.87\,BM$

(C) $5.92\,BM$

(D) $4.90\,BM$

---

4. What is formed when benzene diazonium chloride (BDC) reacts with phenol?

(A) Azo dye (p-hydroxyazobenzene)

(B) Benzoic acid

(C) Benzene

(D) Chlorobenzene

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5. $R-CONH_2+Br_2+4NaOH\rightarrow R-NH_2+Na_2CO_3+2NaBr+2H_2O$**; this reaction is:**

(A) Hinsberg reaction

(B) Carbylamine reaction

(C) Sandmeyer reaction

(D) Hofmann bromamide reaction

---

6. Which compound undergoes the S_N2 reaction the fastest?

(A) CH_3-Br (methyl bromide)

(B) $(CH_3)_2CH-Br$ (secondary bromide)

(C) $(CH_3)_3C-Br$ (tertiary bromide)

(D) CH_3CH_2-Br (primary bromide)

---

7. What is the oxidation state of oxygen in O_2F_2 and O_3?

(A) $+1$ in O_2F_2 and 0 in O_3

(B) -1 in O_2F_2 and $+2$ in O_3

(C) $+2$ in O_2F_2 and -1 in O_3

(D) 0 in both

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8. Which colligative property is most suitable for determining molar mass?

(A) Relative lowering of vapour pressure

(B) Elevation in boiling point

(C) Depression in freezing point

(D) Osmotic pressure

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9. Match the Column-I (Ligands) with Column-II (Ligand type):

Column-I: (I) NO_2^-, (II) OH^-, (III) $C_2O_4^{2-}$, (IV) EDTA.

Column-II: (A) Hexadentate, (B) Bidentate, (C) Monodentate, (D) Ambidentate.

(A) I-D, II-C, III-B, IV-A

(B) I-C, II-D, III-B, IV-A

(C) I-C, II-D, III-A, IV-B

(D) I-A, II-C, III-B, IV-D

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10. Why do aryl halides not show nucleophilic substitution reaction?

(A) The C–X bond has partial double bond character due to resonance.

(B) There is very high steric hindrance in the benzene ring.

(C) The size of the halogen atom is very small.

(D) Aryl carbocation is highly stable.

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11. What is the hybridisation of carbon atoms in $CH_2 = CH - CN$ (Acrylonitrile)?

(A) $C_1 = sp^3,\ C_2 = sp^3,\ C_3 = sp$

(B) $C_1 = sp^2,\ C_2 = sp^2,\ C_3 = sp$

(C) $C_1 = sp^2,\ C_2 = sp,\ C_3 = sp^2$

(D) All carbon atoms are sp^2 hybridised.

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12. What is the structure of Cyclohexyl methanol?

(A) $C_6H_5 - CH_2OH$ (Benzyl alcohol)

(B) $C_6H_{11} - CH_2OH$ (Cyclohexyl methanol)

(C) $C_6H_{11} - OH$ (Cyclohexanol)

(D) $CH_3 - C_6H_{10} - OH$ (Methyl cyclohexanol)

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13. An unknown element 'E' forms two compounds: EO_2 and EX_4. To which group does element 'E' belong?

(A) 13th group (B, Al)

(B) 14th group (C, Si)

(C) 15th group (N, P)

(D) 16th group (O, S)

---

14. What is formed on aromatisation of heptane?

(A) Benzene

(B) Toluene

(C) Xylene

(D) Ethylbenzene

---

15. Hinsberg reaction is used to test which compound and what is the reagent?

(A) Aldehyde test, reagent: Tollens' reagent

(B) Primary, secondary and tertiary amine test, reagent: $C_6H_5SO_2Cl + NaOH$

(C) Alcohol test, reagent: Lucas reagent

(D) Carboxylic acid test, reagent: $NaHCO_3$

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16. What is present in a racemic mixture?

(A) Only dextrorotatory (D) form is present.

(B) Only laevorotatory (L) form is present.

(C) D and L forms are present in a 1:1 ratio, making the mixture optically inactive.

(D) It is a meso compound.

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17. What type of nitrogenous base is Uracil and what is its structure?

(A) Purine base → 2 rings, structure similar to adenine

(B) Pyrimidine base → 1 ring, 2 keto groups at C2 & C4; structure similar to thymine but without $-CH_3$ at C5

(C) Purine base → 1 ring, 3 keto groups

(D) Pyrimidine base → 2 rings, 1 keto group

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18. Match Column-I (Type of isomerism) with Column-II (Examples):

Column-I	**Column-II**
A. Linkage isomerism	1. $[Co(NH_3)_5SO_4]Br / [Co(NH_3)_5Br]SO_4$
B. Ionisation isomerism	2. $[Co(NH_3)_5(NO_2)]Cl_2 / [Co(NH_3)_5(ONO)]Cl_2$
C. Coordination isomerism	3. $[Co(NH_3)_6][Cr(CN)_6] / [Cr(NH_3)_6][Co(CN)_6]$

(A) A-2, B-1, C-3

(B) A-1, B-2, C-3

(C) A-3, B-2, C-1

(D) A-2, B-3, C-1

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19. Which of the following groups increases the acidic strength of carboxylic acid?

(A) CH_3

(B) $-C_2H_5$

(C) $-OCH_3$

(D) $-NO_2$

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20. Match Column-I with Column-II:

Column-I	**Column-II**
A. Homoleptic	*I*. Complex containing different ligands
B. Heteroleptic	*II*. Ligand having two donor atoms
C. Hexadentate	*III*. Complex containing only one type of ligand
D. Bidentate	*IV*. Ligand having six donor atoms

(A) A-III, B-I, C-II, D-IV

(B) A-I, B-III, C-IV, D-II

(C) A-II, B-IV, C-I, D-III

(D) A-III, B-II, C-I, D-IV

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21. Which is the correct pair of chelating and ambidentate ligands?

(A) Chelating: en, Ambidentate: NO_2^-

(B) Chelating: NH_3, Ambidentate: H_2O

(C) Chelating: Cl^-, Ambidentate: en

(D) Chelating: NO_2^-, Ambidentate: $C_2O_4^{2-}$

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22. What happens when an ideal gas undergoes isothermal expansion into vacuum?

(A) $w = 0,\ Q = 0$

(B) $Q = +ve,\ w = -ve$

(C) $w = -ve,\ Q = +ve$

(D) $w = 0$

---

23. What is the structure of Tetrahydrofuran (THF)?

(A) 5-membered saturated ring with 1 oxygen and 4 carbon atoms

(B) 4-membered ring with 1 oxygen and 3 carbon atoms

(C) 6-membered ring with 2 oxygen atoms

(D) Benzene ring containing oxygen

---

24. In the presence of Grignard reagent (RMgX), which of the following is used to prepare a carboxylic acid?

(A) NH_3

(B) CO_2 (Dry ice)

(C) H_2O

(D) O_2

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25. A nucleoside differs from a nucleotide because it lacks:

(A) Nitrogenous base

(B) Pentose sugar

(C) Phosphate group

(D) Glycosidic bond

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26. $[Co(H_2O)_6]^{2+}$ **(Pink)** $+4Cl^- \rightleftharpoons [CoCl_4]^{2-}$ **(Blue)** $+6H_2O$ **(Endothermic reaction). If the mixture is transferred from room temperature to a freezing ice bath, what is expected to happen?**

(A) Colour will remain the same

(B) Colour will become deeper blue

(C) It will become colourless

(D) Colour will become pink

---

27. A substance that contains chemically similar atoms, and the atoms always exist in pairs. What is that substance called?

(A) Solution

(B) Element

(C) Compound

(D) Mixture

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28. A molecule has two bonds of equal length, but its Lewis structure shows one single bond and one double bond. This is best explained by:

(A) Resonance

(B) Hybridisation

(C) Polarisation

(D) Ionization

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29. A cell has a standard electrode potential of $0.354\,V$ at $298\,K$. If 2 electrons are transferred in the cell reaction, what is the equilibrium constant (K) of the reaction at $298\,K$?

(A) 1×10^{12}

(B) 1×10^{11}

(C) 1×10^{10}

(D) 1×10^{13}

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30. Which transition element of the 3d series does not show variable oxidation state?

(A) Scandium (Sc)

(B) Titanium (Ti)

(C) Zinc (Zn)

(D) Chromium (Cr)

Biology

1. According to the classification of algae, 'brown algae' are placed in which class?

(A) Chlorophyceae (Green)

(B) Rhodophyceae (Red)

(C) Phaeophyceae

(D) Cyanophyceae

2. How is the nucleotide different from a nucleoside?

(A) Nitrogen base

(B) Phosphate group

(C) Sugar

(D) Hydrogen bond

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3. Male heterogamy is not present in:

(A) Human

(B) Grasshopper - XO

(C) Drosophila - XY

(D) Honey bee - haploid-diploid

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4. Cotton boll worm and corn borer are killed by which genes?

(A) CryIAc, CryIIAb and CryIAb

(B) CryIAb and CryIIAc

(C) CryIAb, CryIIAb and CryIAc

(D) None of above

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5. Binomial nomenclature was given by:

(A) Carolus Linnaeus

(B) R.H. Whittaker

(C) Bentham

(D) Darwin

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6. Which of the following hormone is not secreted by placenta?

(A) HCG

(B) HPL

(C) Relaxin

(D) Estrogen, progesterone

7. Which is an example of ex situ conservation?

(A) Sacred grove

(B) Biosphere reserve

(C) National park

(D) Botanical garden

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8. Which of the following is not a product of light reaction of photosynthesis?

(A) ATP

(B) NADH

(C) NADPH

(D) Oxygen

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9. Which heart sound is produced by the closure of heart valves?

(A) Lubb–closure of AV valves

(B) Dub–closure of semilunar valves

(C) Dub–opening of AV valve

(D) Both 'A' and 'B'

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10. Match the types of placentation (Column I) with their correct plant examples (Column II).

Column I	Column II
A. Marginal	i. Argemone, Mustard
B. Axile	ii. Dianthus, Primrose
C. Parietal	iii. Sunflower, Marigold
D. Free Central	iv. Pea
	v. Tomato, Lemon, China rose

(A) A-IV, B-V, C-I, D-II

(B) A-I, B-IV, C-III, D-II

(C) A-II, B-III, C-I, D-IV

(D) A-III, B-IV, C-II, D-I

11. Statement 1: Tubectomy is a procedure in which the fallopian tubes are cut or tied. Statement 2: Vasectomy is a procedure in which the vas deferens is cut or tied. Select the correct statement:

(A) Both 1 and 2 are correct

(B) Only 1 is correct

(C) Only 2 is correct

(D) Both 1 and 2 are incorrect

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12. Which of the following matches is correct regarding the shape of bacteria?

(A) Coccus - rod-shaped

(B) Bacillus - comma-shaped

(C) Spirillum - spiral

(D) Vibrio - spherical

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13. Which of the following vertebrate classes is jawless?

(A) Chondrichthyes

(B) Osteichthyes

(C) Trygon & Aves

(D) Cyclostomata

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14. Under the Kingdom Protista, which organisms, often called 'golden algae', are placed along with diatoms?

(A) Dinoflagellates

(B) Desmids

(C) Slime moulds

(D) Euglena

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15. What is the major difference between Hippocampus and Trygon?

(A) Hippocampus lived in sea water while Trygon in fresh water

(B) Trygon swims continuously, whereas Hippocampus does not

(C) Hippocampus is an Osteichthyes fish, while Trygon is a Chondrichthyes fish

(D) B & C both correct

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16. Which of the following is a primary function of the limbic system?

(A) Regulation of blood pressure, cardiovascular and respiration

(B) Control of body temperature, hunger and thirst

(C) Regulation of emotions, behaviour, and memory

(D) Coordination of voluntary movements

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17. Pellicle is a flexible, protein-rich layer found in:

(A) Slime mould

(B) Chrysophytes

(C) Euglenoid / Euglena

(D) Sporozoa

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18. The major pigment responsible for photosynthesis in plants is:

(A) Chlorophyll A

(B) Chlorophyll B

(C) Carotenoids

(D) Phycobilins

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19. IgA immunity provided to a baby at birth is called:

(A) Active immunity

(B) Passive immunity

(C) Artificial immunity

(D) Innate immunity

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20. Which of the following is not a product of anaerobic respiration?

(A) Ethanol + CO_2

(B) Lactic acid

(C) Acetyl CoA

(D) None of the above

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21. Which is the major difference between interkinesis and interphase?

(A) Only (I) and (II)

(B) Only (II) and (III)

(C) Only (I) and (III)

(D) (I), (II) and (III)

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22. Which of the following structures in an anther develops into a pollen sac?

(A) Sporogenous tissue

(B) Microspore

(C) Tapetum

(D) Microsporangium

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23. Choose the right option based on the diagram: 1) Stomatal aperture, 2) Guard cells, 3) Subsidiary cells, 4) Chloroplast

(A) A-1, B-2, C-3, D-4

(B) A-2, B-3, C-1

(C) A-3, B-1, C-2

(D) A-2, B-1, C-3

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24. What is Oviparity?

(A) Animals that give birth to live young ones

(B) They lay eggs, and the embryo develops outside the mother's body

(C) Development inside uterus until birth

(D) Asexual reproduction

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25. Match the type of chromosome (Column I) with the position of its centromere (Column II): Column I: A. Metacentric, B. Sub-metacentric, C. Acrocentric, D. Telocentric

Column II: i. One extremely short arm and one very long arm ii. Terminal centromere iii. One short arm and one long arm iv. Two equal arms

(A) A-IV, B-III, C-I, D-II

(B) A-IV, B-I, C-III, D-II

(C) A-II, B-III, C-I, D-IV

(D) A-III, B-IV, C-II, D-I

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26. Which of the following is not considered a primary limiting factor for the rate of photosynthesis?

(A) Light intensity

(B) Temperature

(C) Carbon dioxide concentration

(D) Oxygen concentration

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27. Which of the following statements are correct?

I) Homologous organs have the same structure but show different functions.

II) Homologous organs have common ancestors.

III) Analogous organs show divergent evolution.

IV) Wings of butterfly and birds are homologous.

(A) I, II and IV are correct

(B) I and II are correct

(C) II, III and IV are correct

(D) Only I and IV are correct

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28. Choose the correct option based on the diagram: 1) Hypothalamus, 2) Anterior pituitary, 3) Posterior pituitary, 4) Hypothalamic neuron

(A) A-1, B-2, C-3, D-4

(B) A-2, B-3, C-4, D-1

(C) A-1, B-3, C-2, D-4

(D) A-4, B-1, C-2, D-3

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29. Which one is the structure of Uracil in RNA?

(A) It is a purine base with a double ring

(B) It is similar to thymine (5-methyl uracil), but lacks the methyl group

(C) It only binds with deoxyribose sugar

(D) It forms hydrogen bonds with guanine

GENERAL KNOWLEDGE

1. What is the capital of Israel?

(A) Tel Aviv

(B) Jerusalem

(C) Haifa

(D) Gaza

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2. What is the official currency of Japan?

(A) Yuan

(B) Yen

(C) Won

(D) Dollar

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3. Which number is wrong in the sequence 6, 12, 24, 48, 96, 244?

(A) 96

(B) 244

(C) 12

(D) 48

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4. Which is the main and official national language of China?

(A) Cantonese

(B) Mandarin / Putonghua

(C) Uyghur

(D) Tibetan

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5. What is a member of the Lok Sabha mainly called?

(A) MLA

(B) MP

(C) Councillor

(D) Governor

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6. Who is the current Union Minister of Agriculture and Farmers Welfare of India?

(A) Narendra Singh Tomar

(B) Arjun Munda

(C) Shivraj Singh Chouhan

(D) Rajnath Singh

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7. Lakshmi is Priya's mother, and Jatin is Priya's brother. Shia is Jatin's daughter. How is Lakshmi related to Shia?

(A) Grandmother

(B) Mother

(C) Aunt

(D) Sister-in-law
