By Mitoprep

NEET 2026 Sample Question Paper by Mitoprep

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Important instructions

- Duration: 3 hours (180 minutes). Total marks: 720[1][3][4].
- 180 multiple-choice questions with four options, only one correct; mark responses on OMR with blue/black ballpoint pen[1][3][4].
- Marking scheme: +4 for correct, –1 for incorrect, 0 for unattempted[6][1][2][3][4].
- Subjects and distribution: Physics 45, Chemistry 45, Biology 90 (Botany 45 + Zoology 45)[1][2][3][4].
- Medium: Not applicable here (English). Follow standard NEET paper pattern[1][3][4].
- Wherever physical constants are not mentioned, use standard values as per NCERT/NEET norms.

Test Booklet Code: 26

Candidate particulars:

Name (CAPITALS): _____

Roll Number: _____ Centre: _____ Signature: _____

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PHYSICS (45 QUESTIONS)

1. A block of mass m is pulled up a rough incline of angle θ with a constant speed by a force F parallel to the plane. The coefficient of kinetic friction is μk. The work done by F in moving the block a distance L along the plane is:
   (1) (mg sinθ + μk mg cosθ)L
   (2) (mg sinθ – μk mg cosθ)L

(3) $(mg \sin\theta + \mu_k mg \cos\theta)L/2$

(4) $(mg \sin\theta - \mu_k mg \cos\theta)L/2$

2. A particle moves along x-axis with position $x(t) = A\cos(\omega t) + B\sin(\omega t)$. The amplitude of motion is:

(1) $A + B$

(2) $|A - B|$

(3) $\sqrt{(A^2 + B^2)}$

(4) $\sqrt{(A^2 - B^2)}$

3. A stone is projected with speed u at angle 45° from ground. The ratio of maximum height to horizontal range is:

(1) 1/4

(2) 1/8

(3) 1/2

(4) 1/16

4. Two blocks m and 2m are connected by a light string over a frictionless pulley and move on a horizontal frictionless surface pulled by force F on the lighter block. The tension in the string is:

(1) 2F/3

(2) F/3

(3) F/2

(4) F/4

5. A uniform rod of length L and mass M is pivoted at one end and released from rest at a small angle. Its angular frequency for small oscillations is:

(1) $\sqrt{(3g/2L)}$

(2) $\sqrt{(g/L)}$

(3) $\sqrt{(3g/L)}$

(4) $\sqrt{(g/2L)}$

6. A particle of mass m moves in a circle of radius R with speed v. The ratio of its kinetic energy to magnitude of angular momentum is:

(1) $v/(2R)$

(2) v/R

(3) 2v/R

(4) v^2/R

7. A satellite of mass m is in a circular orbit of radius 2R around Earth (treated as mass M, radius R ≪ orbit). The energy required to shift it to a circular orbit of radius 3R is:

   (1) GMm/12R

   (2) GMm/18R

   (3) GMm/36R

   (4) GMm/9R

8. Two springs with force constants k and 2k are connected in series. Their equivalent spring constant is:

   (1) (2k/3)

   (2) (3k/2)

   (3) (k/2)

   (4) (2k)

9. A transverse wave on a string is $y = 0.02 \sin(2\pi x/0.5 - 100\pi t)$. The wave speed (in m/s) is:

   (1) 25

   (2) 50

   (3) 100

   (4) 0.5

10. An ideal gas undergoes an isothermal expansion from V to 2V at temperature T. The work done by the gas is:

    (1) nRT ln 2

    (2) nR (2T – T)

    (3) $p\Delta V = nRT$

    (4) nRT/2

11. A heat engine takes 800 J heat at 400 K and rejects 500 J at 300 K per cycle. The engine's efficiency is:

    (1) 37.5%

    (2) 62.5%

    (3) 25%

    (4) 50%

12. The electric field at a point due to an electric dipole of dipole moment p at a distance r on the axial line ($r \gg$ size) is:
    (1) $p/(4\pi\varepsilon_0 r^3)$
    (2) $2p/(4\pi\varepsilon_0 r^3)$
    (3) $p/(4\pi\varepsilon_0 r^2)$
    (4) $2p/(4\pi\varepsilon_0 r^2)$

13. Two large parallel plates carry surface charge densities $+\sigma$ and $-\sigma$. The electric field between the plates is:
    (1) σ/ε_0
    (2) $\sigma/2\varepsilon_0$
    (3) $2\sigma/\varepsilon_0$
    (4) zero

14. A capacitor of C is charged to V and disconnected. A dielectric slab of κ fully fills the space between plates. New potential difference is:
    (1) V/κ
    (2) κV
    (3) V
    (4) $V/\sqrt{\kappa}$

15. A wire of resistance R is stretched uniformly to double length. Its new resistance is:
    (1) 2R
    (2) 4R
    (3) R/2
    (4) R/4

16. Three equal resistors R are connected to form an equilateral triangle. The equivalent resistance between any two vertices is:
    (1) R
    (2) 2R/3
    (3) R/2
    (4) 3R/2

17. A charge q moves with velocity v perpendicular to a uniform magnetic field B. The radius of the circular path is:

(1) mv/qB

(2) qB/mv

(3) mv^2/qB

(4) qvB/m

18. A long straight wire carries current I. The magnetic field at distance r is:

(1) $\mu_0 I/2\pi r$

(2) $\mu_0 I/4\pi r$

(3) $\mu_0 I/\pi r$

(4) $\mu_0 I/2r$

19. A square loop (side a) with N turns is rotated at angular speed ω in a uniform magnetic field B about an axis perpendicular to B. Maximum induced emf is:

(1) NBAω

(2) NBaω

(3) $NBa^2\omega$

(4) NBω

20. An AC source $v = V_0 \sin \omega t$ is applied across an ideal inductor L. The current is:

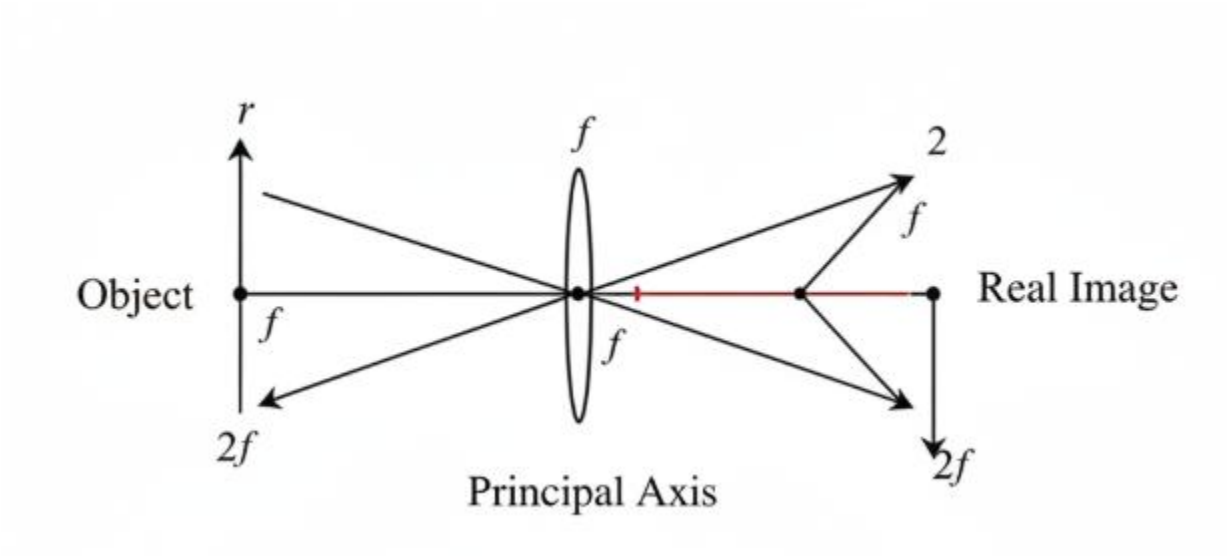
(1) in phase with v

(2) leads v by 90°

(3) lags v by 90°

(4) opposite phase

21.



For the arrangement, the object is at 2F of a thin convex lens (f). The image position and magnification are:

(1) at 2f, m = –1

(2) at f, m = 0

(3) at infinity, m → ∞

(4) at >2f, m < –1

22. In Young's double-slit experiment with monochromatic light of wavelength λ and slit separation d, the fringe width is:

    (1) λD/d

    (2) d/λD

    (3) λd/D

    (4) D/λd

23. Unpolarized light of intensity I0 passes through two ideal polarizers with angle 30° between axes. Transmitted intensity is:

    (1) I0/2

    (2) I0 $\cos^2 30°$

    (3) I0/4

    (4) I0/2 · $\cos^2 30°$

24. Work function of a metal is 2.5 eV. Threshold wavelength is approximately:

    (1) 248 nm

    (2) 496 nm

(3) 620 nm

(4) 1240 nm

25. Stopping potential varies linearly with frequency of incident light. The slope equals:

(1) h/e

(2) e/h

(3) 1/h

(4) hc/e

26. In Bohr model of hydrogen, the ratio of speeds in orbits n=1 and n=2 is:

(1) 1:2

(2) 2:1

(3) 4:1

(4) 1:4

27. A nucleus X decays to Y via α emission. The ratio of daughter to parent mass numbers is:

(1) (A − 2):A

(2) (A − 4):A

(3) (A − 1):A

(4) (A − 3):A

28. A forward-biased p-n diode's I–V curve in the linear region has slope S. The dynamic resistance is:

(1) S

(2) 1/S

(3) S^2

(4) $\sqrt{S}$

29. In a NAND gate, the output is 0 only when inputs are:

(1) 0,0

(2) 1,1

(3) 0,1

(4) 1,0

30. A vernier calipers has 10 vernier divisions equal to 9 main scale divisions; main scale least count is 1 mm. The least count is:

(1) 0.1 mm

(2) 0.01 mm

(3) 0.2 mm

(4) 0.5 mm

31. A projectile fired from ground returns to the same level after time T. The initial speed u in terms of T and g is:

(1) $u = gT/2$

(2) $u = gT$

(3) $u = gT/4$

(4) $u = 2gT$

32. A mass-spring system oscillates with amplitude A and period T. The ratio of kinetic energies at $x = 0$ and $x = A/2$ is:

(1) 4:3

(2) 3:4

(3) 1:3

(4) 3:1

33. Two liquids of densities ρ and 2ρ flow in identical pipes under same pressure difference. The ratio of their volumetric flow rates (Poiseuille's law) is:

(1) 1:2

(2) 2:1

(3) 1:1

(4) 1:4

34. A real gas obeys van der Waals equation. The dimension of 'a' is:

(1) $N \cdot m^4 \cdot mol^{-2}$

(2) $N \cdot m^2 \cdot mol^{-2}$

(3) $N \cdot m^6 \cdot mol^{-2}$

(4) $N \cdot m^2 \cdot mol^{-1}$

35. A point charge +Q is at the center of a conducting spherical shell (inner radius a, outer radius b). The charge induced on inner surface is:

(1) +Q

(2) −Q

(3) 0

(4) +Q/2

36. The equivalent capacitance of two capacitors C and 2C in series is:

(1) 3C

(2) (2C/3)

(3) (3C/2)

(4) (C/2)

37. A 10 Ω resistor, 1 H inductor, and 100 μF capacitor in series at 50 Hz AC. The power factor is closest to:

(1) 1

(2) 0

(3) leading

(4) lagging

38. Brewster angle for a medium with refractive index $\sqrt{3}$ (from air) is:

(1) 30°

(2) 45°

(3) 60°

(4) 90°

39. De Broglie wavelength of an electron accelerated through potential V is proportional to:

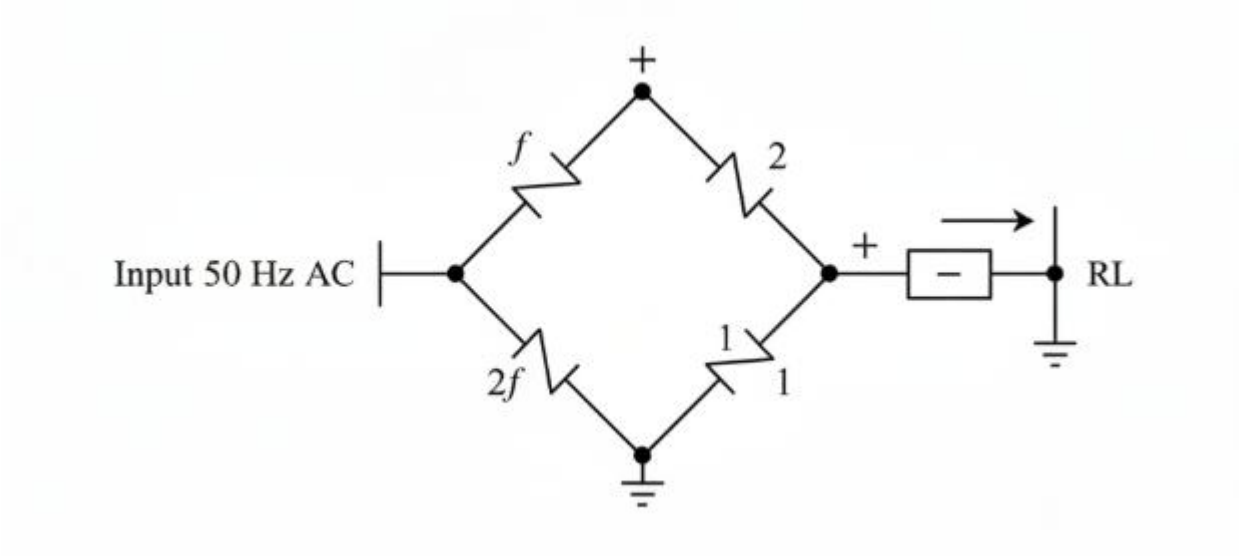
(1) $1/\sqrt{V}$

(2) $\sqrt{V}$

(3) 1/V

(4) V

40.



For an ideal full-wave bridge rectifier, the ripple frequency in the output for input 50 Hz is:

(1) 25 Hz

(2) 50 Hz

(3) 100 Hz

(4) 150 Hz

41. In Compton scattering, the scattered photon has maximum wavelength when scattering angle is:

    (1) 0°

    (2) 90°

    (3) 180°

    (4) 45°

42. Two parallel conducting rails with resistance R are connected; a rod slides with speed v in perpendicular magnetic field B. The induced current is:

    (1) Blv/R

    (2) B^2l^2v/R

    (3) Bl^2v/R

    (4) Bvl/R

43. The binding energy per nucleon is maximum for:

    (1) very light nuclei

    (2) very heavy nuclei

(3) mid-mass nuclei

(4) hydrogen

44. A photodiode operated in reverse bias is useful as:

(1) light emitter

(2) light detector

(3) voltage regulator

(4) oscillator

45. The dimensional formula of permittivity ε0 is:

(1) $M^{-1}L^{-3}T^{4}A^{2}$

(2) $M^{-1}L^{-2}T^{4}A^{2}$

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

(4) $M^{-1}L^{-3}T^{2}A^{2}$

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CHEMISTRY (45 QUESTIONS)

46. The species with highest lattice enthalpy is expected for:

(1) NaCl

(2) MgO

(3) KBr

(4) CaS

47. The orbital having three nodal planes is:

(1) 2p

(2) 3dxy

(3) 3px

(4) 4s

48. For a first-order reaction, the half-life depends on:

(1) initial concentration only

(2) rate constant only

(3) both initial concentration and rate constant

(4) temperature only

49. The enthalpy change for reverse of a reaction is:
    (1) same as forward
    (2) negative of forward
    (3) double forward
    (4) zero

50. Maximum number of H-bonds formed by a single water molecule in ice is:
    (1) 2
    (2) 3
    (3) 4
    (4) 5

51. Colligative properties depend upon:
    (1) nature of solute
    (2) number of solute particles
    (3) size of solute molecules
    (4) shape of solute molecules

52. The correct order of increasing acid strength is:
    (1) HF < HCl < HBr < HI
    (2) HI < HBr < HCl < HF
    (3) HCl < HF < HBr < HI
    (4) HBr < HI < HF < HCl

53. For the equilibrium $N_2O_4(g) \rightleftharpoons 2NO_2(g)$, the value of Kp in terms of Kc and temperature T is:
    (1) $K_p = K_c(RT)^2$
    (2) $K_p = K_c/RT$
    (3) $K_p = K_c \cdot RT$
    (4) $K_p = K_c/(RT)^2$

54. The standard electrode potential most positive corresponds to:
    (1) strongest oxidizing agent
    (2) strongest reducing agent
    (3) most reactive metal
    (4) highest pH

55. The molar conductivity of a strong electrolyte:
    (1) increases with dilution
    (2) decreases with dilution
    (3) independent of dilution
    (4) first increases then decreases

56. The correct statement about zero-order reaction:
    (1) t1/2 depends on initial concentration
    (2) rate is independent of concentration
    (3) rate is directly proportional to concentration
    (4) units of k are s^{-1}

57. The coordination compound with highest number of ionizable chloride ions: [Co(NH3)4Cl2]Cl, [Co(NH3)5Cl]Cl2, [Co(NH3)6]Cl3, [CoCl3(NH3)3]
    (1) [Co(NH3)4Cl2]Cl
    (2) [Co(NH3)5Cl]Cl2
    (3) [Co(NH3)6]Cl3
    (4) [CoCl3(NH3)3]

58. The geometry of $[Ni(CN)4]^{2-}$ is:
    (1) tetrahedral, paramagnetic
    (2) square planar, diamagnetic
    (3) square planar, paramagnetic
    (4) tetrahedral, diamagnetic

59. The pair of species that are isoelectronic:
    (1) CO2 and NO2
    (2) O2 and N2
    (3) CN^- and CO
    (4) NO^+ and $O2^-$

60. The major product in nitration of nitrobenzene is:
    (1) o-dinitrobenzene
    (2) m-dinitrobenzene
    (3) p-dinitrobenzene
    (4) nitrobenzyl alcohol

61. The reagent set that converts an aldehyde to a primary alcohol:
    (1) PCC
    (2) $KMnO_4$/acid
    (3) $NaBH_4$ or $LiAlH_4$
    (4) H_2SO_4/Δ

62. The most stable carbocation:
    (1) CH_3^+
    (2) Ph_3C^+
    (3) $CH_3CH_2^+$
    (4) isopropyl+

63. The order of SN1 reactivity is:
    (1) 3° > 2° > 1°
    (2) 1° > 2° > 3°
    (3) allyl < vinyl < aryl
    (4) methyl > 1° > 2°

64. The product formed on bromination of acetone in presence of base (haloform reaction intermediate step) is:
    (1) CH_3COCH_2Br
    (2) $CH_3COCHBr_2$
    (3) CH_3COCBr_3
    (4) $CH_2BrCOCH_3$

65. The IUPAC name of $CH_3–CH(OH)–CH_3$ is:
    (1) propan-1-ol
    (2) propan-2-ol
    (3) methyl ethanol
    (4) isopropyl alcohol (common)

66. Among the following, the strongest acid is:
    (1) p-nitrophenol
    (2) phenol
    (3) p-methylphenol
    (4) p-methoxyphenol

67. The correct order of boiling points:
    (1) alkanes < aldehydes < alcohols
    (2) alcohols < aldehydes < alkanes
    (3) aldehydes < alkanes < alcohols
    (4) alkanes < alcohols < aldehydes

68. The monosaccharide which is a ketohexose:
    (1) glucose
    (2) fructose
    (3) galactose
    (4) ribose

69. The base pairing in DNA involves:
    (1) A–C and G–T
    (2) A–G and C–T
    (3) A–T and G–C
    (4) A–U and G–C

70. The number of peptides possible from three different amino acids linking once each is:
    (1) 3
    (2) 6
    (3) 9
    (4) 12

71. The maximum number of stereoisomers possible for tartaric acid (2,3-dihydroxybutanedioic acid) is:
    (1) 2
    (2) 3
    (3) 4
    (4) 1

72. The pair showing geometrical isomerism:
    (1) 1,1-dichloroethene
    (2) 1,2-dichloroethene
    (3) 1,1-dimethylcyclopropane
    (4) 2-bromopropane

73. Which is aromatic by Hückel's rule?
    (1) cyclobutadiene
    (2) benzene
    (3) cyclooctatetraene (planar)
    (4) cyclopropenyl anion

74. pH of 0.01 M NaOH is:
    (1) 2
    (2) 12
    (3) 1
    (4) 13

75. Buffer having equal concentration of acid and conjugate base has pH equal to:
    (1) 7
    (2) pKa
    (3) pKw
    (4) pKb

76. The standard enthalpy of formation of elements in their most stable form is:
    (1) zero
    (2) one
    (3) negative
    (4) positive

77. The gas with highest rate of effusion at same T and P:
    (1) O_2
    (2) CO_2
    (3) NH_3
    (4) SO_2

78. The crystal system with $a = b \neq c$; $\alpha = \beta = 90°$, $\gamma = 120°$ is:
    (1) cubic
    (2) tetragonal
    (3) hexagonal
    (4) monoclinic

79. The Langmuir adsorption isotherm at high pressure predicts:
    (1) $x/m \propto P$
    (2) $x/m \propto 1/P$
    (3) x/m constant
    (4) $x/m \propto P^2$

80. Rate law for $2A + B \rightarrow$ products is rate = k[A][B]. If [A] is doubled and [B] halved, rate changes by:
    (1) unchanged
    (2) doubles
    (3) halves
    (4) quadruples

81. The cathode in electrolytic refining of copper is:
    (1) pure copper
    (2) impure copper
    (3) graphite
    (4) platinum

82. The ore of aluminium is:
    (1) hematite
    (2) bauxite
    (3) cassiterite
    (4) calamine

83. The oxidation state of S in H_2SO_4 is:
    (1) +6
    (2) +4
    (3) +2
    (4) 0

84. The shape of SF_6 is:
    (1) trigonal bipyramidal
    (2) octahedral
    (3) square pyramidal
    (4) tetrahedral

85. The metal that forms amphoteric oxide:
    (1) Na
    (2) Mg
    (3) Al
    (4) K

86. The color of KMnO4 is due to:
    (1) d–d transition
    (2) charge transfer
    (3) f–f transition
    (4) s–p transition

87. The ion showing highest spin-only magnetic moment:
    (1) Fe^{2+} (d6, high spin)
    (2) Fe^{3+} (d5, high spin)
    (3) Ni^{2+} (d8)
    (4) Cu^{2+} (d9)

88. The reagent for distinguishing aldehydes from ketones (generally):
    (1) 2,4-DNP
    (2) Tollens' reagent
    (3) Brady's reagent only
    (4) Conc. H2SO4

89. Ozonolysis of an alkene gives only glyoxal (OHC–CHO). The alkene is:
    (1) ethene
    (2) propene
    (3) 2-butene
    (4) 1-butene

90. The product on alkaline hydrolysis of an amide is:
    (1) amine + alcohol
    (2) carboxylate + ammonia/amine
    (3) carboxylic acid + amine
    (4) ester + ammonia

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BIOLOGY (BOTANY 45 + ZOOLOGY 45 = 90 QUESTIONS)

91. Glycolysis occurs in:
    (1) mitochondrial matrix
    (2) cytosol
    (3) chloroplast stroma
    (4) inner mitochondrial membrane

92. The first stable product of C3 cycle is:
    (1) PGA (3-phosphoglycerate)
    (2) OAA
    (3) PEP
    (4) RuBP

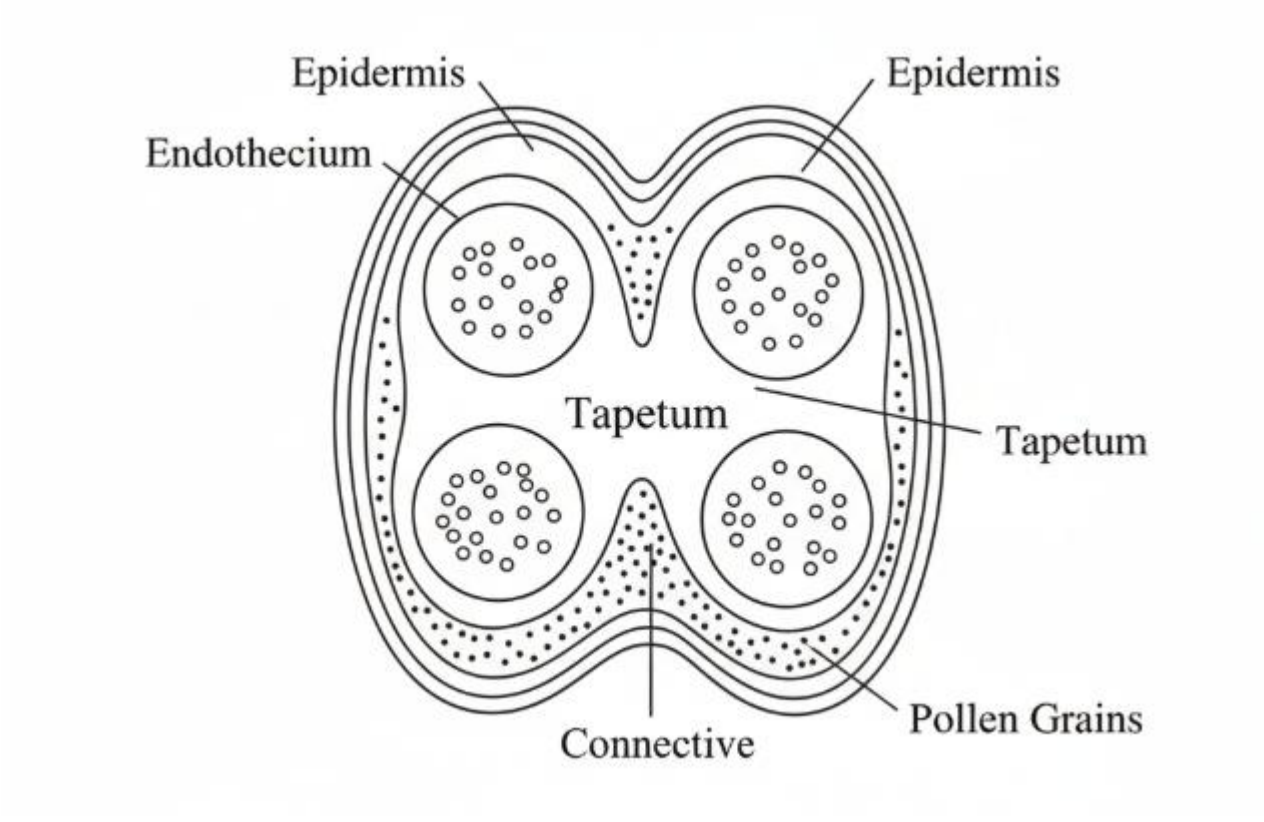
93. In photorespiration, the organelles involved are:
    (1) mitochondria only
    (2) chloroplast and mitochondria
    (3) chloroplast, peroxisome, mitochondria
    (4) peroxisome only

94. The apoplastic pathway is interrupted at:
    (1) endodermis with Casparian strips
    (2) epidermis
    (3) cortex
    (4) pericycle

95. The hormone promoting stomatal closure during water stress is:
    (1) auxin
    (2) gibberellin
    (3) cytokinin
    (4) abscisic acid

96. Double fertilization leads to formation of:
    (1) embryo and endosperm (triploid)
    (2) two embryos
    (3) two endosperms
    (4) embryo and perisperm

97.



The nutritive layer of anther is:

(1) endothecium

(2) tapetum

(3) epidermis

(4) connective

98. In angiosperms, the type of embryo sac most common is:

(1) monosporic, Polygonum type

(2) bisporic, Allium type

(3) tetrasporic, Fritillaria type

(4) monosporic, Oenothera type

99. Vernalization refers to:

(1) low temperature requirement for flowering

(2) high temperature requirement for flowering

(3) photoperiodic induction

(4) seed dormancy breaking by scarification

100. The dominant phase in bryophytes is:

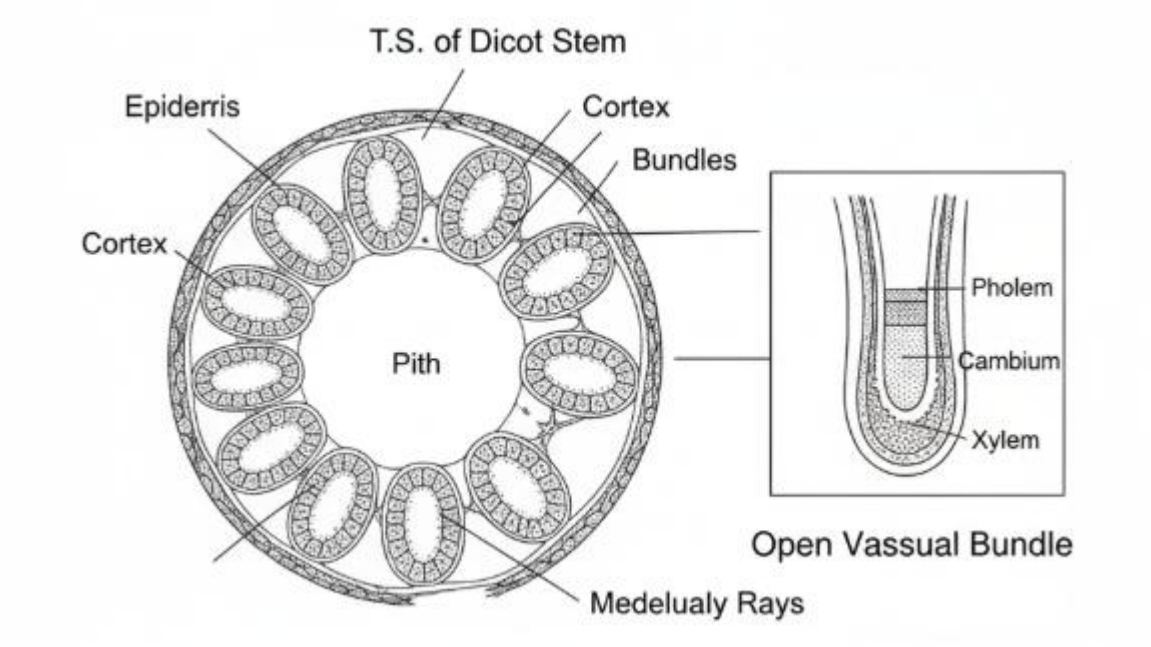
(1) sporophyte

(2) gametophyte

(3) both equal

(4) protonema only

101.



In dicot stem, vascular bundles are:

(1) closed and scattered

(2) open and in a ring

(3) closed and in a ring

(4) open and scattered

102. Casparian strips are chemically:

(1) cellulose

(2) cutin

(3) suberin and lignin

(4) pectin

103. C4 plants have CO2 fixation initially in:
    (1) mesophyll via RuBisCO
    (2) bundle sheath via PEP carboxylase
    (3) mesophyll via PEP carboxylase
    (4) bundle sheath via RuBisCO

104. The primary xylem is:
    (1) endarch in stem
    (2) exarch in stem
    (3) mesarch in stem
    (4) centrarch in stem

105. Nitrogenase requires:
    (1) oxygen
    (2) ATP and anaerobic conditions
    (3) only light
    (4) only NADPH

106. The end product of β-oxidation enters:
    (1) glycolysis as G3P
    (2) TCA cycle as acetyl-CoA
    (3) ETC directly
    (4) Calvin cycle

107. Which is not a greenhouse gas?
    (1) CO2
    (2) CH4
    (3) N2
    (4) N2O

108. The pyramid of biomass is inverted in:
    (1) forest
    (2) grassland
    (3) pond ecosystem
    (4) desert

109. The climax community concept was proposed by:
    (1) Clements
    (2) Odum
    (3) Tansley
    (4) Elton

110. In Hardy–Weinberg equilibrium, 2pq represents:
    (1) frequency of AA
    (2) frequency of aa
    (3) frequency of Aa
    (4) frequency of allele a

111. The codon AUG codes for:
    (1) stop
    (2) methionine and start
    (3) leucine
    (4) valine

112. The enzyme that removes RNA primers during DNA replication in prokaryotes:
    (1) DNA pol I
    (2) DNA pol II
    (3) DNA pol III
    (4) primase

113. The anticodon is present on:
    (1) mRNA
    (2) tRNA
    (3) rRNA
    (4) snRNA

114. Lac operon is induced in presence of:
    (1) lactose (allolactose)
    (2) glucose
    (3) both lactose and glucose high
    (4) absence of lactose

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115. A frameshift mutation often results from:
    (1) base substitution
    (2) base deletion or insertion
    (3) tautomerization
    (4) methylation

116. Hershey and Chase used:
    (1) ^{32}P and ^{35}S labeling
    (2) ^{14}C and ^{3}H
    (3) ^{13}C and ^{15}N
    (4) ^{15}N only

117. During translation, peptide bond formation is catalyzed by:
    (1) protein enzyme of large subunit
    (2) rRNA (ribozyme) of large subunit
    (3) small subunit protein
    (4) tRNA enzyme

118. The selectable marker in pBR322 includes:
    (1) tetracycline and ampicillin resistance
    (2) chloramphenicol only
    (3) kanamycin only
    (4) lacZ only

119. ELISA is based on:
    (1) antigen–antibody specificity
    (2) DNA–DNA hybridization
    (3) RNA interference
    (4) southern blotting

120. Bt toxin gene is expressed in plants to provide resistance against:
    (1) bacterial wilt
    (2) insect pests like bollworm
    (3) viral mosaic
    (4) fungal rust

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121. Humoral immunity is mediated by:
    (1) T-cells
    (2) B-cells and antibodies
    (3) macrophages only
    (4) NK cells only

122. The first line drug in treatment of tuberculosis is:
    (1) penicillin
    (2) isoniazid
    (3) erythromycin
    (4) amphotericin B

123. HIV primarily infects:
    (1) CD4+ T helper cells
    (2) RBCs
    (3) B-cells
    (4) neurons

124. The contraceptive Cu-T acts by:
    (1) releasing estrogen
    (2) inhibiting ovulation
    (3) creating uterine environment unfavorable for implantation and sperm motility
    (4) blocking LH surge permanently

125. Test cross involves crossing F1 with:
    (1) F1
    (2) recessive parent (homozygous)
    (3) dominant parent
    (4) any parent

126. A dihybrid cross phenotypic ratio in independent assortment is:
    (1) 9:3:3:1
    (2) 3:1
    (3) 1:2:1
    (4) 1:1

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127. Linkage reduces:
    (1) recombination
    (2) parental types
    (3) gene mapping
    (4) mutation rate

128. Non-disjunction at meiosis can lead to:
    (1) translocation
    (2) aneuploidy
    (3) inversion
    (4) duplication only

129. Turner's syndrome karyotype is:
    (1) 47, XXY
    (2) 45, X0
    (3) 47, XYY
    (4) 46, XY

130. The sarcomere extends between:
    (1) Z to Z lines
    (2) M to M lines
    (3) A to A bands
    (4) I to A band

131. Sliding filament model involves:
    (1) actin shortening
    (2) myosin shortening
    (3) Z lines approaching as actin slides over myosin
    (4) thick filament length changes

132. The pacemaker in human heart is:
    (1) AV node
    (2) SA node
    (3) Bundle of His
    (4) Purkinje fibers

133. Fibrin is formed from fibrinogen by:
    (1) plasmin
    (2) thrombin
    (3) heparin
    (4) renin

134. Filtration in nephron occurs at:
    (1) PCT
    (2) DCT
    (3) glomerulus/Bowman's capsule
    (4) loop of Henle

135. Aldosterone acts primarily on:
    (1) PCT for glucose reabsorption
    (2) DCT and collecting duct for Na+ reabsorption
    (3) loop of Henle descending
    (4) Bowman's space

136. TSH is secreted by:
    (1) posterior pituitary
    (2) anterior pituitary
    (3) thyroid
    (4) hypothalamus

137. The receptor for steroid hormones is:
    (1) on plasma membrane
    (2) cytosolic/nuclear
    (3) in lysosome
    (4) on ribosome

138. Insulin is secreted by:
    (1) α-cells of pancreas
    (2) β-cells of pancreas
    (3) δ-cells of pancreas
    (4) PP cells

139. Myelin sheath in PNS is formed by:
    (1) oligodendrocytes
    (2) Schwann cells
    (3) astrocytes
    (4) microglia

140. The respiratory pigment in humans binds O2 to:
    (1) copper
    (2) iron of heme
    (3) magnesium
    (4) calcium

141. Vital capacity is:
    (1) TV + IRV
    (2) TV + ERV
    (3) IRV + TV + ERV
    (4) TLC – RV

142. Bohr effect refers to:
    (1) effect of CO2/H+ on O2 Hb dissociation
    (2) effect of O2 on CO2 transport
    (3) effect of temperature on O2 solubility
    (4) effect of 2,3-BPG on plasma CO2

143. The enzyme that digests protein in stomach is:
    (1) pepsin
    (2) trypsin
    (3) chymotrypsin
    (4) lipase

144. Bile salts help in:
    (1) carbohydrate digestion
    (2) protein digestion
    (3) fat emulsification
    (4) vitamin C absorption

145. Erythropoietin is produced by:
    (1) liver
    (2) kidney
    (3) bone marrow
    (4) spleen

146. Parturition is induced by:
    (1) low oxytocin
    (2) increased oxytocin and prostaglandins
    (3) low estrogen:progesterone ratio
    (4) inhibition of uterine contractions

147. The contraceptive that also protects against STDs:
    (1) oral pills
    (2) condoms
    (3) IUDs
    (4) injectables

148. The vestigial organ in human:
    (1) appendix vermiformis
    (2) liver
    (3) spleen
    (4) cerebellum

149. Industrial melanism in peppered moth is an example of:
    (1) genetic drift
    (2) natural selection
    (3) mutation only
    (4) artificial selection

150. The pioneer species on bare rock:
    (1) mosses first
    (2) lichens
    (3) grasses first
    (4) shrubs

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151. The biomagnification is highest for:
    (1) nitrates
    (2) phosphates
    (3) DDT
    (4) CO_2

152. In pedigree, a sex-linked recessive trait shows:
    (1) father-to-son transmission common
    (2) more males affected; carrier females
    (3) equal sex distribution
    (4) only females affected

153. The ABO blood group inheritance is due to:
    (1) multiple alleles and codominance
    (2) polygenic inheritance
    (3) pleiotropy
    (4) epistasis

154. Neuron's resting membrane potential is mainly due to:
    (1) Na^+ influx
    (2) K^+ efflux and Na^+/K^+ pump
    (3) Cl^- influx only
    (4) Ca^{2+} channels

155. Corpus luteum secretes:
    (1) estrogen only
    (2) progesterone (and some estrogen)
    (3) FSH
    (4) LH

156. Part of brain responsible for thermoregulation:
    (1) cerebrum
    (2) cerebellum
    (3) hypothalamus
    (4) medulla

157. Sickle-cell anemia is caused by substitution of:
    (1) valine by glutamic acid at 6th position of β-chain
    (2) glutamic acid by valine at 6th position of β-chain
    (3) leucine by valine at 6th
    (4) alanine by glycine at 6th

158. Western blot is used to detect:
    (1) DNA
    (2) RNA
    (3) proteins
    (4) lipids

159. Excessive use of fertilizers causes:
    (1) eutrophication
    (2) biomagnification of CO2
    (3) ozone depletion
    (4) El Niño

160. Colostrum is rich in:
    (1) IgA
    (2) IgG only
    (3) IgM only
    (4) IgE

161. The canal of Schlemm is associated with:
    (1) ear pressure
    (2) venous sinus of eye draining aqueous humor
    (3) CSF drainage
    (4) lymph drainage

162. The organ of Corti is present in:
    (1) semicircular canals
    (2) utricle
    (3) cochlea
    (4) saccule

163. Hormone causing milk ejection:
    (1) prolactin
    (2) oxytocin
    (3) FSH
    (4) LH

164. Immunization by injection of pre-formed antibodies is:
    (1) active natural
    (2) active artificial
    (3) passive artificial
    (4) passive natural

165. The disease caused by protozoan:
    (1) tuberculosis
    (2) malaria
    (3) ringworm
    (4) influenza

166. Hindgut fermentation is characteristic of:
    (1) ruminants
    (2) rabbits and horses (caecum)
    (3) carnivores
    (4) primates only

167. Vitamin D deficiency leads to:
    (1) scurvy
    (2) rickets/osteomalacia
    (3) pellagra
    (4) beriberi

168. Cellular immunity is mediated by:
    (1) B-lymphocytes
    (2) T-lymphocytes
    (3) plasma cells only
    (4) macrophage antibodies

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169. The cartilage present at ends of long bones:
    (1) elastic
    (2) fibrocartilage
    (3) hyaline
    (4) calcified bone only

170. Surfactant is secreted by:
    (1) type I pneumocytes
    (2) type II pneumocytes
    (3) macrophages
    (4) capillary endothelium

171. The Kuhn cycle is related to:
    (1) photosynthesis
    (2) nitrogen fixation
    (3) urea cycle
    (4) none (distractor; correct: none)

172. The enzyme carbonic anhydrase is present in:
    (1) RBCs
    (2) WBCs
    (3) platelets
    (4) plasma only

173. Myogenic heart means:
    (1) heartbeat initiated by SA node within heart muscle
    (2) heart controlled only by nerves
    (3) heart of invertebrates only
    (4) ectopic pacemaker

174. The ligament connecting femur and tibia at knee is:
    (1) patellar tendon only
    (2) cruciate ligaments
    (3) rotator cuff
    (4) annular ligament

175. Genetic drift is more significant in:
    (1) large populations
    (2) small populations
    (3) equal in all
    (4) only in plants

176. The edible part of strawberry is:
    (1) ovary
    (2) thalamus (receptacle)
    (3) pericarp only
    (4) seed

177. The ecological niche is:
    (1) address of organism
    (2) profession/functional role of organism
    (3) both address and profession
    (4) habitat only

178. The chief nitrogenous waste in birds is:
    (1) ammonia
    (2) urea
    (3) uric acid
    (4) creatinine

179. COPD includes:
    (1) emphysema and chronic bronchitis
    (2) asthma and pneumonia
    (3) TB and fibrosis
    (4) only emphysema

180. The Leydig (interstitial) cells secrete:
    (1) FSH
    (2) testosterone
    (3) estrogen
    (4) prolactin

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