

ANSWER KEY & SOLUTIONS**SET 5**

NEET (UG) 2027 PRACTICE EXAMINATION — TEST BOOKLET SET 5

Candidate	Aamirah Fathima	Total Questions	180
Maximum Marks	720	Marking Scheme	+4 / -1 / 0

KEY

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

1. (3) Candela

Candela is one of the seven base units of the SI system.

[Units & Dimensions]

2. (3) 0.01 mm

Least count = pitch/number of circular scale divisions = 1/100 mm.

[Errors & Significant Figures]

3. (2) 2 m s⁻²

$$v^2 = u^2 - 2as \Rightarrow 0 = 400 - 2a(100) \Rightarrow a = 2 \text{ m s}^{-2}.$$

[Kinematics]

4. (2) Zero velocity and acceleration g downwards

Gravity continues to act throughout the flight even where the velocity vanishes.

[Kinematics]

5. (2) Act on two different bodies and never cancel

They form a pair on two different bodies, so they never balance each other.

[Laws of Motion]

6. (2) Linear momentum

Ejecting exhaust gases backwards drives the rocket forwards.

[Laws of Motion]

7. (3) 300 W

$$P = mgh/t = 60 \times 10 \times 5/10 = 300 \text{ W}.$$

[Work, Energy & Power]

8. (2) 0.5

$$e = \sqrt{(h_{\text{rebound}}/h_{\text{drop}})} = \sqrt{(1/4)} = 0.5.$$

[Work, Energy & Power]

9. (2) 2 kg m² s⁻¹

$$L = I\omega = 0.5 \times 4 = 2 \text{ kg m}^2 \text{ s}^{-1}.$$

[Rotational Motion]

10. (3) $\frac{1}{2}I\omega^2$

It is the rotational analogue of $\frac{1}{2}mv^2$.

[Rotational Motion]

11. (2) $v_e = \sqrt{2} v_o$

$$v_o = \sqrt{(gR)} \text{ while } v_e = \sqrt{(2gR)}.$$

[Gravitation]

12. (2) Zero everywhere inside

The contributions from all parts of the shell cancel at every interior point.

[Gravitation]

13. (2) Proportional limit

Stress is proportional to strain only in the initial linear region of the curve.

[Elasticity]

14. (1) $6\pi\eta rv$

This is Stokes' law, valid for slow motion of a small sphere.

[Fluids]

15. (2) $8\pi r^2 T$

A bubble has two surfaces, so $W = 2 \times 4\pi r^2 T$.

[Fluids]

16. (2) The temperature difference between the body and its surroundings

The law holds for small temperature differences.

[Thermal Properties]

17. (2) 40%

$$\eta = 1 - Q_2/Q_1 = 1 - 0.6 = 0.4 \text{ or } 40\%.$$

[Thermodynamics]

18. (2) $TV^{(\gamma-1)} = \text{constant}$

It follows from $PV^\gamma = \text{constant}$ combined with the ideal gas equation.

[Thermodynamics]

19. (2) Inversely proportional to volume

This is Boyle's law, $PV = \text{constant}$.

[Kinetic Theory]

20. (3) a

$$a = -\omega^2 x, \text{ so acceleration is always opposite in direction to displacement.}$$

[Oscillations]

21. (2) $k_1 k_2 / (k_1 + k_2)$

Extensions add in series, so the reciprocals of the force constants add.

[Oscillations]

22. (3) 7 cm

For a phase difference of zero the amplitudes add directly.

[Waves]

23. (2) Logarithmic in intensity

$\beta = 10 \log(I/I_0)$, so each 10 dB step represents a tenfold change in intensity.

[Waves]

24. (3) 90°

$\tau = pE \sin\theta$ is greatest when the dipole is perpendicular to the field.

[Electrostatics]

25. (2) The net electric flux through the surface is zero

Gauss's law fixes the net flux, not the field at individual points.

[Electrostatics]

26. (2) $1 \times 10^{-3} \text{ C}$

$Q = CV = 5 \times 10^{-6} \times 200 = 10^{-3} \text{ C}$.

[Capacitors]

27. (2) A junction diode

The current-voltage graph of a diode is not a straight line.

[Current Electricity]

28. (2) Infinite resistance and be connected in parallel

A high resistance in parallel draws negligible current from the circuit.

[Current Electricity]

29. (2) A low resistance in parallel

The shunt carries most of the current, protecting the galvanometer coil.

[Current Electricity]

30. (2) 0.1 N

$F = BIL \sin\theta = 0.1 \times 2 \times 0.5 \times 1 = 0.1 \text{ N}$.

[Moving Charges & Magnetism]

31. (2) Uniform and equal to $\mu_0 nI$

The field is uniform along the axis in the interior, well away from the ends.

[Moving Charges & Magnetism]

32. (2) $M/2$

Pole strength is unchanged but the length halves, so the moment halves.

[Magnetism & Matter]

33. (2) Fleming's right hand rule

The left hand rule instead gives the direction of force on a current-carrying conductor.

[Electromagnetic Induction]

34. (2) Using a laminated core

Thin insulated laminations break up the paths available to eddy currents.

[Electromagnetic Induction]

35. (2) R/Z

$\cos \phi = R/Z$, which is unity for a purely resistive circuit.

[Alternating Current]

36. (3) 311 V

$V_0 = \sqrt{2} \times V_{\text{rms}} = 1.414 \times 220 \approx 311 \text{ V}$.

[Alternating Current]

37. (2) $1/\sqrt{(\mu_0 \epsilon_0)}$

$c = 1/\sqrt{(\mu_0 \epsilon_0)} = 3 \times 10^8 \text{ m s}^{-1}$.

[Electromagnetic Waves]

38. (3) 30 cm

$1/v + 1/u = 1/f$ with the mirror formula gives a real image 30 cm from the mirror.

[Ray Optics]

39. (2) The refractive index of the prism differs for different wavelengths

Violet is deviated most because the material has the largest refractive index for it.

[Ray Optics]

40. (3) $I_0/8$

The first polaroid gives $I_0/2$, then Malus' law gives $(I_0/2)\cos^2 60^\circ = I_0/8$.

[Wave Optics]

41. (2) Decreases as the slit is made wider

The angular width $2\lambda/a$ shrinks when a increases.

[Wave Optics]

42. (2) Its mass is very large, making the wavelength immeasurably small

$\lambda = h/mv$ is of the order of 10^{-34} m for macroscopic objects.

[Dual Nature of Matter]

43. (3) 200 MeV

The mass defect corresponds to roughly 200 MeV per fission event.

[Nuclei]

44. (3) 13.6 eV

The electron must be raised from -13.6 eV to zero energy at $n = \infty$.

[Atoms]

45. (2) AND

The AND gate performs logical multiplication, $Y = A \cdot B$.

[Semiconductors]

46. (2) 1.204×10^{24}

One mole contains 6.022×10^{23} molecules, each with two atoms.

[Some Basic Concepts]

47. (2) 0.2

$$x = 2/(2 + 8) = 0.2.$$

[Some Basic Concepts]

48. (2) $E = hc/\lambda$

Since $\nu = c/\lambda$, $E = h\nu = hc/\lambda$, so shorter wavelength means more energetic photons.

[Structure of Atom]

49. (2) No two electrons in an atom can have the same set of four quantum numbers

This limits any orbital to a maximum of two electrons with opposite spins.

[Structure of Atom]

50. (2) Increases

Increasing atomic size makes the loss of electrons easier down a group.

[Classification & Periodicity]

51. (2) An alkali metal

A single electron in the outermost s orbital is the mark of group 1.

[Classification & Periodicity]

52. (2) sp^3d^2 , octahedral

Six bond pairs and no lone pair around sulphur give a regular octahedron.

[Chemical Bonding]

53. (3) H-F

Ionic character increases with the electronegativity difference, greatest for H-F.

[Chemical Bonding]

54. (2) It is formed by head-on axial overlap giving greater overlap

Lateral overlap in a pi bond is less effective than axial overlap.

[Chemical Bonding]

55. (1) 1

With 18 electrons, $BO = (10 - 8)/2 = 1$, and the ion is diamagnetic.

[Chemical Bonding]

56. (2) $-P\Delta V$

Work done by the system on the surroundings is negative by convention.

[Thermodynamics]

57. (2) Zero

There is only one way of arranging a perfect crystal at 0 K, so $S = 0$.

[Thermodynamics]

58. (2) Shifts the equilibrium in the backward direction

The system opposes the added heat by favouring the endothermic backward reaction.

[Equilibrium]

59. (1) 2.0

A lower pK_a corresponds to a larger K_a and therefore a stronger acid.

[Equilibrium]

60. (2) CH_3COOH and CH_3COONa

A weak acid together with its salt of a strong base resists change in pH.

[Equilibrium]

61. (3) +6

$$2(+1) + x + 4(-2) = 0 \Rightarrow x = +6.$$

[Redox Reactions]

62. (2) Decreases rapidly with distance and is negligible beyond three carbons

It is a permanent but weak effect transmitted through sigma bonds.

[Organic Chemistry - Basic Principles]

63. (2) Nitrogen, sulphur and halogens

Fusion with sodium converts these elements into ionisable inorganic compounds.

[Organic Chemistry - Basic Principles]

64. (2) Distance moved by substance/distance moved by solvent

R_f values are characteristic of a compound under fixed conditions.

[Organic Chemistry - Basic Principles]

65. (2) Lower torsional strain

Repulsion between C-H bonding electron pairs is minimised in the staggered form.

[Hydrocarbons]

66. (2) Rotation about the carbon-carbon double bond is restricted

Each doubly bonded carbon carries two different groups.

[Hydrocarbons]

67. (3) Meta position

Deactivating groups such as $-\text{NO}_2$ are meta directing in electrophilic substitution.

[Hydrocarbons]

68. (2) $\Delta H_{\text{mix}} = 0$ and $\Delta V_{\text{mix}} = 0$

Solute-solvent interactions are identical to solute-solute and solvent-solvent ones.

[Solutions]

69. (2) Osmotic pressure at the same temperature

Blood cells stay intact in a solution isotonic with the cell fluid.

[Solutions]

70. (2) 0.00 V

It is assigned zero by convention and used as the reference electrode.

[Electrochemistry]

71. (2) Has a more negative reduction potential and is oxidised in preference to iron

The zinc coating acts as a sacrificial anode.

[Electrochemistry]

72. (2) Pseudo first order kinetics

The concentration of water is effectively constant, so the rate depends only on the ester.

[Chemical Kinetics]

73. (2) Sufficient energy and proper orientation of the colliding molecules

Molecules must collide with energy at least equal to the threshold energy and be correctly aligned.

[Chemical Kinetics]

74. (2) The energies of the ns and (n – 1)d orbitals are comparable

Electrons from both sub-shells can participate in bond formation.

[d- and f-Block Elements]

75. (2) Yellow, forming the chromate ion

$\text{Cr}_2\text{O}_7^{2-} + 2\text{OH}^- \rightleftharpoons 2\text{CrO}_4^{2-} + \text{H}_2\text{O}$; the change is reversed on acidification.

[d- and f-Block Elements]

76. (2) A larger number of oxidation states

The 5f, 6d and 7s levels are of comparable energy, allowing many oxidation states.

[d- and f-Block Elements]

77. (3) 4

One complex cation and three chloride ions are produced.

[Coordination Compounds]

78. (2) $[\text{Co}(\text{en})_3]^{3+}$

The tris-chelate octahedral complex exists as non-superimposable mirror images.

[Coordination Compounds]

79. (2) Tetracarbonylnickel(0)

Carbon monoxide is a neutral ligand, so nickel is in the zero oxidation state.

[Coordination Compounds]

80. (2) Reacts readily with water to give an alkane

Even traces of moisture destroy the reagent, giving the corresponding hydrocarbon.

[Haloalkanes & Haloarenes]

81. (2) An antiseptic

Its antiseptic action is due to the liberation of free iodine.

[Haloalkanes & Haloarenes]

82. (2) Neutral ferric chloride solution

Phenol gives a violet colouration with neutral FeCl_3 while ethanol does not react.

[Alcohols, Phenols & Ethers]

83. (2) Iodomethane and ethanol

The iodide attacks the less hindered methyl group by $\text{S}_\text{N}2$.

[Alcohols, Phenols & Ethers]

84. (2) Chromyl chloride

CrO_2Cl_2 oxidises the methyl group only as far as the aldehyde stage.

[Aldehydes, Ketones & Carboxylic Acids]

85. (2) Ethanoic acid > phenol > ethanol

The carboxylate ion is stabilised by two equivalent resonance structures.

[Aldehydes, Ketones & Carboxylic Acids]

86. (2) An aldehyde

Hydrogen with palladium on barium sulphate, partially poisoned, stops at the aldehyde.

[Aldehydes, Ketones & Carboxylic Acids]

87. (2) One carbon atom less

The carbonyl carbon is lost as carbonate during the rearrangement.

[Amines]

88. (2) Aniline

Sn/HCl reduces the nitro group completely to the primary aromatic amine.

[Amines]

89. (2) Ribozymes

Nucleic acids can also act as biological catalysts.

[Biomolecules]

90. (1) Amylose and amylopectin

Amylose is unbranched and helical while amylopectin is branched.

[Biomolecules]

91. (2) Taxon

Insects, mammals and Solanum are all taxa at different ranks.

[The Living World]

92. (2) Conjugation

Conjugation, transformation and transduction bring about genetic recombination in bacteria.

[Biological Classification]

93. (2) Indestructible silica forming a soapbox-like structure

Their accumulated remains over billions of years form diatomaceous earth.

[Biological Classification]

94. (3) W. M. Stanley

Stanley showed that viruses could be crystallised, and the crystals largely consist of proteins.

[Biological Classification]

95. (2) r-Phycocyanin

This pigment allows red algae to photosynthesise in deeper water.

[Plant Kingdom]

96. (2) One cotyledon and parallel venation

Monocots also typically have a fibrous root system and trimerous flowers.

[Plant Kingdom]

97. (2) Wheat

Monocots such as wheat show a fibrous root system.

[Morphology of Flowering Plants]

98. (2) Pinnately compound

In a pinnately compound leaf the leaflets are borne on a common rachis.

[Morphology of Flowering Plants]

99. (2) Zygomorphic

Pea and Cassia flowers are zygomorphic, or bilaterally symmetrical.

[Morphology of Flowering Plants]

100. (1) Epidermal, ground and vascular

This classification is based on the position of tissues within the plant body.

[Anatomy of Flowering Plants]

101. (2) Multicellular and often branched

Trichomes help prevent water loss, while unicellular root hairs absorb water.

[Anatomy of Flowering Plants]

102. (2) Large, thick walled with no intercellular spaces

This Kranz anatomy is central to the concentration of CO₂ around RuBisCO.

[Anatomy of Flowering Plants]

103. (2) Plasmodesmata

They permit the movement of substances directly from cell to cell.

[Cell: The Unit of Life]

104. (2) Tonoplast

The vacuole may occupy up to 90% of the cell volume and stores ions against a gradient.

[Cell: The Unit of Life]

105. (2) Peroxisome

Peroxisomes are single membrane bound microbodies found in plant and animal cells.

[Cell: The Unit of Life]

106. (2) Micromolecules or metabolites

Proteins, nucleic acids and polysaccharides constitute the acid insoluble fraction.

[Biomolecules]

107. (2) Prosthetic group

The haem group of peroxidase is a prosthetic group.

[Biomolecules]

108. (2) The chromosome number in the daughter cells remains the same as in the parent

Each daughter cell receives an identical set of chromosomes.

[Cell Cycle & Cell Division]

109. (3) Four haploid cells

A single round of replication is followed by two nuclear divisions.

[Cell Cycle & Cell Division]

110. (2) Action spectrum

The absorption spectrum instead plots the light absorbed by a pigment.

[Photosynthesis]

111. (2) Thylakoid membranes and stroma

ATP and NADPH made on the membranes are used for carbon fixation in the stroma.

[Photosynthesis]

112. (2) Cladophora and aerobic bacteria

Aerobic bacteria accumulated where oxygen release was greatest, in the blue and red regions.

[Photosynthesis]

113. (3) 3 ATP

FADH₂ oxidation yields about 2 ATP because it enters the chain at a later point.

[Respiration in Plants]

114. (2) Lactic acid

Lactate dehydrogenase reduces pyruvate, and the accumulation causes cramps.

[Respiration in Plants]

115. (2) Short day plants

The site of light perception is the leaf, and a hormonal signal migrates to the shoot apex.

[Plant Growth & Development]

116. (2) Stimulates stomatal closure and induces dormancy

It increases tolerance to various kinds of stress and antagonises gibberellin.

[Plant Growth & Development]

117. (2) Two celled with a vegetative and a generative cell

In about 40% of species, the generative cell divides first, giving a three celled pollen grain.

[Sexual Reproduction in Flowering Plants]

118. (2) Well exposed stamens and large feathery stigmas

They also produce enormous quantities of light, dry, non-sticky pollen.

[Sexual Reproduction in Flowering Plants]

119. (1) Vallisneria and Zostera

Water pollination is quite rare and limited to about 30 genera, mostly monocots.

[Sexual Reproduction in Flowering Plants]

120. (2) The embryo is protected and provided with reserve food for dispersal

Dormancy and a hard seed coat also allow survival in unfavourable conditions.

[Sexual Reproduction in Flowering Plants]

121. (2) Has several contrasting traits, is self pollinating and has a short life cycle

These features gave him clear-cut, reproducible ratios in large numbers.

[Principles of Inheritance]

122. (2) On different chromosomes or far apart on the same chromosome

Tightly linked genes tend to be inherited together and violate this law.

[Principles of Inheritance]

123. (2) A quantitative defect in the synthesis of globin chains

Too few alpha or beta globin chains are made, though their structure is normal.

[Principles of Inheritance]

124. (2) A frameshift mutation altering the reading frame

All codons downstream of the change are misread.

[Principles of Inheritance]

125. (2) Heterogametic, ZW

The male bird is ZZ, the reverse of the situation in humans.

[Principles of Inheritance]

126. (2) Sulphur and phosphorus

³⁵S labelled the protein coat while ³²P labelled the DNA that entered the bacterium.

[Molecular Basis of Inheritance]

127. (2) Crick

In some retroviruses the flow is reversed, RNA to DNA, by reverse transcriptase.

[Molecular Basis of Inheritance]

128. (2) Methionine

AUG has the dual function of acting as start codon and coding for methionine.

[Molecular Basis of Inheritance]

129. (2) A repetitive non-coding sequence showing high polymorphism

Its repeat copy number varies greatly from individual to individual.

[Molecular Basis of Inheritance]

130. (2) Eurythermal

Stenothermal organisms, by contrast, tolerate only a narrow range.

[Organisms & Populations]

131. (2) Aestivation

Zooplankton in lakes instead enter diapause, a stage of suspended development.

[Organisms & Populations]

132. (2) Grazing food chain

In terrestrial ecosystems a much larger fraction of energy flows through the detritus chain.

[Ecosystem]

133. (2) Inverted

One producer supports a much larger number of primary consumers.

[Ecosystem]

134. (2) Genetic diversity

The plants differ in the potency and concentration of the chemical reserpine.

[Biodiversity & Conservation]

135. (2) Is estimated to produce a large share of the earth's oxygen through photosynthesis

It also harbours probably the greatest biodiversity on earth.

[Biodiversity & Conservation]

136. (2) Spongocoel

The water current through the canal system aids food gathering, respiration and waste removal.

[Animal Kingdom]

137. (3) Ctenophora

Sea walnuts also show striking bioluminescence.

[Animal Kingdom]

138. (3) Gills covered by an operculum and an air bladder

Chondrichthyes lack both an operculum and a swim bladder.

[Animal Kingdom]

139. (4) Mammals

Mammals also possess external ears and mammary glands.

[Animal Kingdom]

140. (2) Protect and support the neurons

Neuroglia make up more than half the volume of neural tissue.

[Structural Organisation in Animals]

141. (1) Foregut and midgut

These six to eight blind tubules secrete digestive juice.

[Structural Organisation in Animals]

142. (2) Tidal volume + inspiratory reserve volume

It is the total volume a person can inspire after a normal expiration.

[Breathing & Exchange of Gases]

143. (2) Difficulty in breathing due to inflammation of the bronchi and bronchioles

Wheezing results from narrowing of the inflamed air passages.

[Breathing & Exchange of Gases]

144. (2) Conduct impulses rapidly throughout the ventricular musculature

The bundle of His branches into the fine Purkinje fibres.

[Body Fluids & Circulation]

145. (2) An Rh negative mother carries an Rh positive foetus

Maternal anti-Rh antibodies formed in a later pregnancy destroy foetal red cells.

[Body Fluids & Circulation]

146. (2) Insufficient oxygen reaching the heart muscle

The acute chest pain often results from narrowed coronary arteries.

[Body Fluids & Circulation]

147. (2) Selective secretion of H^+ and K^+ and reabsorption of bicarbonate

It helps maintain the pH and the sodium-potassium balance of blood.

[Excretory Products]

148. (2) Lungs and skin

Lungs remove CO_2 while sweat and sebaceous glands eliminate salts and some urea.

[Excretory Products]

149. (2) Acts as an ATPase and forms cross bridges with actin

The heavy meromyosin head projects outwards and binds the actin filament.

[Locomotion & Movement]

150. (1) Ilium, ischium and pubis fused at the acetabulum

The head of the femur articulates with the cavity called the acetabulum.

[Locomotion & Movement]

151. (3) True or vertebrosteral ribs

Pairs 8 to 10 join the sternum indirectly and are called false ribs.

[Locomotion & Movement]

152. (2) Schwann cells

Gaps between successive myelin segments form the nodes of Ranvier.

[Neural Control & Coordination]

153. (2) Midbrain

A canal called the cerebral aqueduct passes through the midbrain.

[Neural Control & Coordination]

154. (3) Chemoreceptors

They detect chemicals and generate the sensations of taste and smell.

[Neural Control & Coordination]

155. (2) Contains iodine and regulates the basal metabolic rate

It also supports erythropoiesis and influences water and electrolyte balance.

[Chemical Coordination]

156. (2) Mucosa of the small intestine

CCK acts on the pancreas and gall bladder while secretin acts on the exocrine pancreas.

[Chemical Coordination]

157. (2) Suppresses the immune response

It also stimulates gluconeogenesis, lipolysis and proteolysis.

[Chemical Coordination]

158. (1) Rete testis, vasa efferentia, epididymis, vas deferens

The vas deferens joins the duct of the seminal vesicle to form the ejaculatory duct.

[Human Reproduction]

159. (2) Secondary oocyte

It is arrested in metaphase II until a sperm enters.

[Human Reproduction]

160. (2) 7 days after fertilisation

Finger-like chorionic villi then interdigitate with the uterine tissue to form the placenta.

[Human Reproduction]

161. (2) Develops limbs and digits

Most major organ systems are formed by the end of twelve weeks.

[Human Reproduction]

162. (2) 72 hours of coitus

Administration of progestogens or IUD insertion within this period can avoid pregnancy.

[Reproductive Health]

163. (2) Chromosomal abnormalities and metabolic disorders in the foetus

Foetal cells in the amniotic fluid are cultured and karyotyped.

[Reproductive Health]

164. (2) Creating awareness and providing facilities for reproductive health

Improved detection and cure of STIs is one of its important components.

[Reproductive Health]

165. (2) Branching descent and natural selection

Darwin explained evolution by variation and differential reproductive fitness.

[Evolution]

166. (2) Saltation caused by mutation

He worked on evening primrose and considered Darwinian variations too minor.

[Evolution]

167. (2) Sedimentary rocks

The relative age of a fossil can be estimated from the depth of the sedimentary layer.

[Evolution]

168. (2) The vermiform appendix

Nictitating membrane, ear muscles and body hair are other examples.

[Evolution]

169. (2) Speciation

Once interbreeding stops, the populations accumulate independent genetic changes.

[Evolution]

170. (2) The nose and respiratory passage but not the lungs

Symptoms include nasal congestion, sore throat and cough lasting three to seven days.

[Human Health & Disease]

171. (1) Microsporum, Trichophyton and Epidermophyton

The infection thrives in moist skin folds such as between the toes.

[Human Health & Disease]

172. (2) Bone marrow and thymus

Lymphocytes mature and become immunocompetent in the primary lymphoid organs.

[Human Health & Disease]

173. (2) An autoimmune disease

The immune system attacks self cells because of a failure to distinguish self from non-self.

[Human Health & Disease]

174. (2) Sarcoma

Carcinomas arise from epithelial tissue and leukaemias from blood-forming cells.

[Human Health & Disease]

175. (2) Adrenaline and noradrenaline

These raise blood pressure and heart rate.

[Human Health & Disease]

176. (2) DNA ligase

Ligase seals the phosphodiester backbone between the vector and the insert.

[Biotechnology - Principles]

177. (2) An origin of replication, a selectable marker and suitable restriction sites

These features allow replication, selection of transformants and insertion of foreign DNA.

[Biotechnology - Principles]

178. (2) Plant cells, by bombardment with DNA coated gold or tungsten particles

Micro-injection is preferred for animal cells and disarmed retroviruses for gene therapy.

[Biotechnology - Principles]

179. (2) Test the safety of vaccines before they are used on humans

They are also used to study genetic disease and to test drug toxicity.

[Biotechnology - Applications]

180. (2) Biopiracy

The patents granted on basmati rice and on neem drew attention to this issue.

[Biotechnology - Applications]