

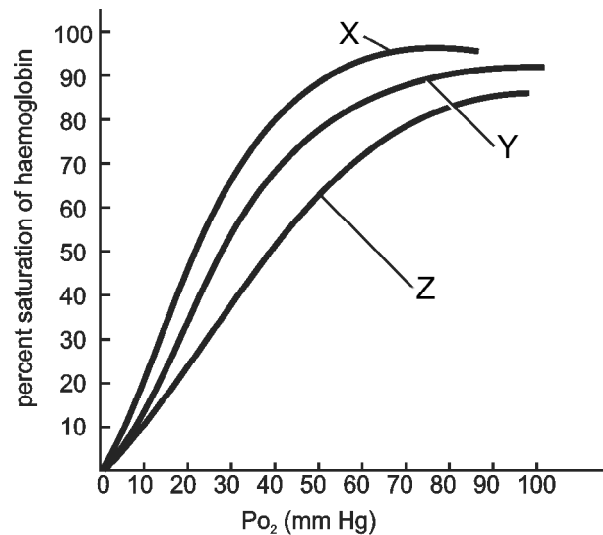
144. Mark the *correct* statement about ozone.

- (1) Bad ozone is formed in the troposphere whereas good ozone is found in the ionosphere.
 - (2) Bad ozone is formed in the mesosphere whereas good ozone is found in the thermosphere.
 - (3) Bad ozone is formed in the stratosphere whereas good ozone is found in the troposphere.
 - (4) Bad ozone is formed in the troposphere whereas good ozone is found in the stratosphere.
-

145. Choose the correctly matched pair.

- (1) Specialised connective tissue – areolar tissue
 - (2) Dense regular connective tissue – tendon
 - (3) Loose connective tissue – cartilage
 - (4) Fluid connective tissue – bone
-

146. The following oxygen-haemoglobin dissociation curves explain the effect of pH on oxygen-affinity of haemoglobin. Find out option that gives the correct descending order of pH for X, Y and Z.



- (1) Z>Y>X
 - (2) X>Z>Y
 - (3) Y>X>Z
 - (4) X>Y>Z
-

147. Choose the correctly matched pair.

- (1) Columnar epithelium – proximal convoluted tubule of nephron
 - (2) Cuboidal epithelium – mucosa of stomach and intestine
 - (3) Squamous epithelium – alveoli of lungs
 - (4) Compound epithelium – bronchioles
-

148. Fructose is absorbed into the blood through mucosa cells of intestine by the process called

- (1) Facilitated transport
 - (2) Active transport
 - (3) Simple diffusion
 - (4) Co-transport
-

Rough Work

149. About seven percent of carbon dioxide is transported to the lungs

- (1) As carbamino compounds through RBC
- (2) In a dissolved state through the plasma
- (3) As bicarbonate ions through RBC
- (4) As bicarbonate ions through the plasma

150. A person with 'O' type blood is considered universal donor because he has

- (1) Both anti-A and anti-B antibodies in his blood plasma and has A and B antigens on his RBC
- (2) Neither anti-A nor anti-B antibodies in his blood plasma
- (3) Neither A nor B antigens on his RBC
- (4) Both A and B antigens on his RBC

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

- (1) Maltase → Amylase → Lactase
- (2) Lipase → Trypsin → Aminopeptidase
- (3) Salivary amylase → Trypsin → Invertase
- (4) Salivary amylase → Pancreatic amylase → Maltase

152. Muscles that help in the blood circulation in cockroach are

- | | |
|--------------------------|----------------------------------|
| (1) Alary muscles | (2) Dorsal longitudinal muscles |
| (3) Dorsoventral muscles | (4) Ventral longitudinal muscles |

153. The following figure shows a human blood cell. Identify it along with its characteristic.



	Blood cell	Characteristic
(1)	Basophil	Involved in inflammatory reactions
(2)	Neutrophil	The most abundant cells of total WBC
(3)	Lymphocyte	Responsible for immune responses of the body
(3)	Monocyte	Phagocytic and destroy foreign organisms

154. Select the correct matching of the type of the joint with the example in human skeletal system:

- (1) Fibrous joint - between adjacent vertebrae in the vertebral column
- (2) Cartilaginous joint – sutures between the cranial bones
- (3) Pivot joint – between carpal bones in the wrist
- (4) Saddle joint – between carpal and metacarpal of the thumb

Rough Work

155. Identify the *correct* matching of a hormone with its source and function.

- (1) PTH – Parathyroid glands; decreases calcium levels in the blood
 - (2) Melatonin – Pituitary gland; maintains sleep-wake cycle
 - (3) Cortisol – adrenal cortex; carbohydrate metabolism
 - (4) Renin – JG cells of efferent arteriole; increases GFR
-

156. Hypoglycemia stimulates the secretion of

- (1) Glucagon from beta cells – It stimulates glycogenolysis and gluconeogenesis
 - (2) Glucagon from alpha cells – It stimulates glycogenolysis and gluconeogenesis
 - (3) Insulin from beta cells – It stimulates glycogenesis and lipogenesis
 - (4) Insulin from beta cells – It stimulates glycogenesis and lipogenesis
-

157. Select the correct option with respect to cockroaches.

- (1) The head holds a bit of a nervous system while the rest is situated along the belly-side part of its body.
 - (2) Males bear a pair of short, thread-like anal cerci which are absent in females.
 - (3) The mesothoracic wings are transparent, membranous and are used in flight.
 - (4) Malpighian tubules remove urea from the haemolymph and release it into the hindgut.
-

158. Hormones produced in women only during pregnancy are

- (1) Oestrogen, progesterone, FSH and LH
 - (2) hCG, oxytocin and prolactin
 - (3) Relaxin, oxytocin and progesterone
 - (4) Human chorionic gonadotropin, human placental lactogen and relaxin
-

159. Which of the following is a contraceptive that contains progesterone?

- (1) LNG-20
 - (2) Multiload-375
 - (3) Saheli
 - (4) Lippes loop
-

160. Active sites are unmasked when calcium binds with a subunit of

- (1) Troponin
 - (2) Tropomyosin
 - (3) Actin
 - (4) Myosin
-

161. A localized injury to the hypothalamus is not likely to affect

- (1) Eating
 - (2) Drinking
 - (3) Breathing
 - (4) Body temperature
-

162. Assisted reproductive technology, GIFT involves transfer of

- (1) Ovum collected from a donor into the fallopian tube of another woman who cannot produce one.
 - (2) The zygote into the fallopian tube.
 - (3) The early embryos with upto 8 blastomeres into the uterus.
 - (4) Sperm from husband or a donor into the cytoplasm of the ovum.
-

Rough Work

- 163.** A colour-blind man whose father was normal, marries a normal woman whose father was colour-blind. What percentage of the children of this couple are likely to be colour-blind?
(1) 0% (2) 25% (3) 50% (4) 75%
-
- 164.** In a population of 10,000 individuals, 6,400 individuals are of the genotype 'AA', 3,200 individuals are of the genotype 'Aa' and the remaining individuals are of the genotype 'aa'. Based on this data, the frequency of the allele 'A' in the population is
(1) 0.2 (2) 0.4 (3) 0.7 (4) 0.8
-
- 165.** A human with Down's syndrome
(1) Has the karyotype 47,XXY
(2) Has an additional copy of chromosome 21
(3) Lacks one X chromosome and has rudimentary ovaries
(4) Lacks one chromosome in the 21st pair
-
- 166.** The sequencing and annotation of chromosome 1, the largest chromosome in the human genome, was completed in the year
(1) 2006 (2) 2003 (3) 2005 (4) 1990
-
- 167.** Eyes of octopus and of mammals are an example of
(1) Vestigial organs (2) Homologous organs
(3) Adaptive radiation (4) Analogous organs
-
- 168.** Which drug is extracted from the plant shown below?
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- (1) Marijuana (2) Morphine (3) Cocaine (4) LSD
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- 169.** It is imperative, for the physical and psychological well-being, that the HIV/AIDS infected persons are not isolated from family and society because
(1) There is always a time-lag between the infection and appearance of AIDS symptoms.
(2) HIV is not spread by mere touch; it spreads only through body fluids.
(3) Anti-retroviral drugs are available to cure the disease effectively.
(4) AIDS is only a congenital disease and cannot be acquired during the life of a person.

Rough Work

170. Which of the following is an example of 'escape in time' from stressful environmental conditions?
- (1) A person moving from Delhi to Shimla for the duration of summer.
 - (2) Change of the osmotic concentration of the body fluids in aquatic animals when the ambient water osmotic concentration changes.
 - (3) Siberian cranes migrating to Keolado National Park in Rajasthan every winter.
 - (4) Many zooplankton species in lakes and ponds entering *diapause* under unfavourable conditions.
-

171. The random unidirectional change in allelic frequencies that occurs by chance, especially in small populations is called
- (1) Mutation
 - (2) Genetic recombination
 - (3) Natural selection
 - (4) Genetic drift
-

172. Atrial systole increases the flow of blood into the ventricles by about
- (1) 30%
 - (2) 50%
 - (3) 10%
 - (4) 60%
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173. Which one of the following is not a parasitic adaptation?
- (1) Loss of unnecessary sense organs
 - (2) Presence of adhesive organs
 - (3) Loss of reproductive capacity
 - (4) Loss of digestive system
-

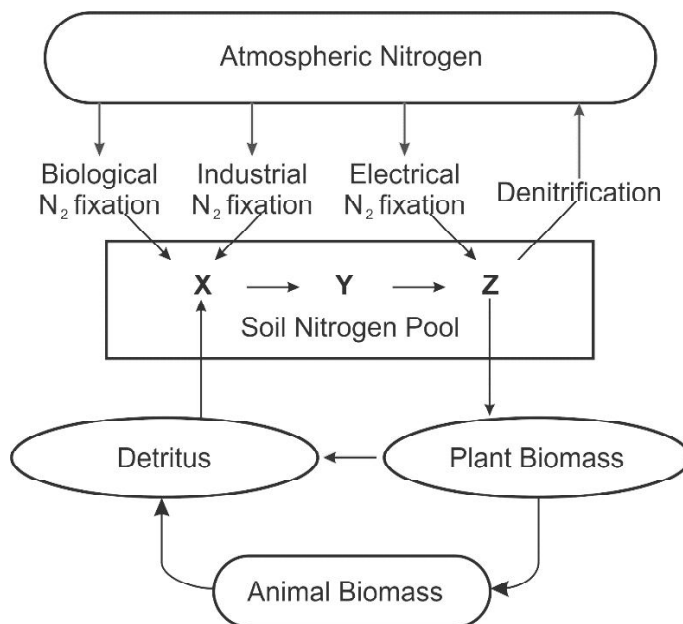
174. Which of the following are barrier methods of contraception?
- (1) Condoms and intrauterine devices
 - (2) Condoms, diaphragms, cervical caps and vaults
 - (3) Lippes loop, multiload-375, vaults and cervical caps
 - (4) Vasectomy, tubectomy and coitus interruptus
-

175. Which one of the following statements is *not correct*?
- (1) Scala media is filled with endolymph.
 - (2) At the base of the cochlea, the scala vestibuli ends at the oval window.
 - (3) Ampulla contains a projecting ridge called macula.
 - (4) Organ of Corti contains hair cells covered by a tectorial membrane.
-

176. The foetal ejection reflex triggers the release of
- (1) Oxytocin from the maternal pituitary
 - (2) Oxytocin from the foetal pituitary
 - (3) hCG from the placenta
 - (4) hPL from the placenta
-

Rough Work

177. Given below is a simplified model of nitrogen cycle in an ecosystem with three blanks labelled X, Y and Z. Identify the blanks.



Options:

	X	Y	Z
(1)	NH_3	NO_3^-	NO_2^-
(2)	N_2	NO_2^-	NO_3^-
(3)	NH_3	NO_2^-	NO_3^-
(4)	NO_3^-	NO_2^-	NH_3

178. The vehicular emission control device that converts carbon monoxide to carbon dioxide is

- (1) Scrubber (2) Catalytic converter
 (3) Electrostatic precipitator (4) Incinerator

179. If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain?

Plant → Mice → Snake → Peacock

- (1) 2 J (2) 0.2 J (3) 0.02 J (4) 0.002 J

180. Renal pyramids contain

- (1) Proximal convoluted tubules (2) Malpighian corpuscles
 (3) Distal convoluted tubules (4) Loops of Henle

Rough Work