

1. The process of gastrulation in amphibian embryos starts from the dorsal lip of blastopore by
- (a) epiboly
  - (b) invagination
  - (c) evagination
  - (d) delamination
2. The central zone overlying the sub-germinal cavity of developing egg of a chick is called
- (a) area pellucida
  - (b) area opaca
  - (c) epiblast
  - (d) hypoblast
3. Which one of the following is formed by mesoderm of gastrula?
- (a) Central nervous system
  - (b) Epidermis
  - (c) Circulatory system
  - (d) Liver and pancreas
4. Which one of the following events is not correct about metamorphosis of ascidian tadpoles?
- (a) Dorsal tubular nerve cord is transformed into a trunk ganglion
  - (b) Long muscular tail is resorbed
  - (c) Gills and gill slits disappear
  - (d) Notochord disappears along with the tail

5. Yolk sac placenta is found in
- (a) pig
  - (b) sheep
  - (c) primate
  - (d) didelphys
6. The placenta produces which of the following hormones?
- (a) Estradiol, relaxin, inhibin
  - (b) Progesterone, inhibin, clusterin
  - (c) Estradiol, progesterone, relaxin
  - (d) Relaxin, inhibin, androgen
7. Species which are closely related, morphologically similar, reproductively isolated, live in sympatric populations are designated as
- (a) clines
  - (b) ecads
  - (c) demes
  - (d) sibling
8. Industrial melanism in certain moths is an example of
- (a) warning coloration
  - (b) mullerian mimicry
  - (c) sexual selection
  - (d) directional natural selection

9. Down the South, Wallace's line passes between the islands

- (a) Sumatra and Java
- (b) Borneo and Celebes
- (c) Timor and New Guinea
- ✓ (d) Bali and Lombok

10. Zygodactylous condition is the characteristic of

- (a) *Phrynosoma*
- (b) *Hemidactylus*
- (c) *Calotes*
- ✓ (d) *Chameleon*

11. Consider the following statements :

Hardy-Weinberg equilibrium is maintained in a population where

1. random mating takes place
2. there is no natural selection
3. a population may gain or loose alleles

Which of the statements given above is/are correct?

- (a) 1 only
- ✓ (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

12. Which of the following is an Indian vector for *Leishmania donovani*?

- (a) *Phlebotomus perniciosus*
- (b) *Phlebotomus chinensis*
- ✓ (c) *Phlebotomus argentipes*
- (d) *Phlebotomus orientalis*

13. The drug 'Cantharidin' is produced from the dried bodies of

- (a) vine girder beetles
- ✓ (b) blister beetles
- (c) tiger beetles
- (d) ground beetles

14. Which one of the following is a potamodromous fish?

- (a) Eel
- (b) Hilsa
- ✓ (c) Rohu
- (d) Mackerel

15. Jaw teeth of sharks are

- ✓ (a) modified placoid scales
- (b) modified cosmoid scales
- ✓ (c) non-placoid scales
- (d) ganoid scales

16. Which one of the following helps to breed fish in artificial conditions?

(a) MS 222

(b) MSH

(c) HCG

(d) DDVP

17. Even though limbs and girdles are generally not found in snakes, vestiges of the pelvic girdle and hind limbs persist in

(a) king cobra

(b) sea snake

(c) python

(d) viper

18. Which of the following snakes has loreal pits that help the snake in tracking down warm-blooded animals even in pitch darkness?

(a) Banded krait

(b) Cobra

(c) Green python

(d) Rattlesnake

19. In centipedes, poisonous claws are the modification of which structure?

(a) Antenna

(b) Mandible

(c) First pair of legs

(d) Last pair of legs

20. Match List-I with List-II and select the correct answer using the code given below the lists :

List-I

List-II

A. Freshwater prawn

B. Grasshopper

C. Cockroach

D. Sheep liver fluke

1. Muller's organ

2. Flame cells

3. Green gland

4. Urate cells

Code :

(a) A B C D  
2 1 4 3

(b) A B C D  
2 4 1 3

(c) A B C D  
3 1 4 2

(d) A B C D  
3 4 1 2

21. Webbed neck and sexual infantilism are the characteristic features of

- (a) Mongolism
- (b) Klinefelter's syndrome
- (c) Turner's syndrome
- (d) Trisomy 13-15

22. Which of the following is the genetic disorder of humans which occurs due to criss-cross inheritance of recessive genes?

- (a) Huntington's chorea
- (b) Haemophilia
- (c) Pernicious anaemia
- (d) Thalassaemia

23. Consider the following statements :

1. Annual changes in temperature in aquatic environments are more marked in temperate freshwater climates than in other climates.
2. Temperature is the major factor in the creation of ocean currents and air currents.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

24. In a shallow lentic habitat, which zone is most productive?

- (a) Littoral
- (b) Profundal
- (c) Pelagic
- (d) Limnetic

25. In which of the following secondarily aquatic animals is blubber present?

- (a) *Carcharodon carcharias*
- (b) *Balaenoptera musculus*
- (c) *Chimaera*
- (d) *Hydrophis*

26. Consider the following statements :

1. Marine fishes drink water to solve the problem of dehydration.
2. The glomeruli of marine fishes are well-vascularized.
3. In marine fishes, the loss of salt is kept at minimum level by active re-absorption in the proximal segment of the renal tubule.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

27. Match List-I with List-II and select the correct answer using the code given below the Lists :

List-I	List-II
A. Desert adaptation	1. Gibbon
B. Fossorial adaptation	2. Naked mole rat
C. Scansorial adaptation	3. Opossum
D. Arboreal adaptation	4. Horned toad

Code :

(a) A B C D  
1 2 3 4

(b) A B C D  
1 3 2 4

(c) A B C D  
4 3 2 1

(d) A B C D  
4 2 3 1

28. Consider the following pairs :

- Secondary aquatic animal : *Exocoetus*
- Desert fauna of India : *Uromastix*
- Seawater animal : *Daphnia*

Which of the above pairs is/are correctly matched?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 2 only

(d) 1, 2 and 3

29. Consider the following statements :

- The slothbear is mainly nocturnal ✓
- The V-shaped patch of white on the chest is distinguishing feature of slothbear.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

30. With reference to environmental pollution, consider the following statements :

- Organic phosphates are degradable chemical insecticides.
- Chlorinated hydrocarbons depress photosynthesis of marine phytoplankton but have no adverse effect on aquatic animals.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

31. Which one of the following vertebrates retains the left systemic arch?

- (a) Frog
- (b) Lizard
- (c) Pigeon
- (d) Rat

32. Urinary bladder is absent in all birds, **except**

- (a) duck
- (b) gull
- (c) owl
- (d) ostrich

33. Thermoregulatory centre in mammals is located in

- (a) pons Varolii
- (b) floccular lobes
- (c) hypothalamus
- (d) corpus callosum

34. Which of the following is **not** a function of sympathetic nervous system?

- (a) Increase in blood sugar
- (b) Rise in blood pressure
- (c) Decrease in clotting time of blood
- (d) Constriction of bronchi

35. Consider the following statements :

Coenzyme

1. is necessary for the active state of an enzyme
2. remains unchanged at the end of reaction
3. is non-protein in nature

Which of the statements given above are correct?

- (a) 1, 2 and 3
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1 and 2 only

36. Which one of the following is a common feature of facilitated transport and active transport?

- (a) Both involve expenditure of energy.
- (b) Both involve membrane transport proteins.
- (c) In both, transport takes place necessarily from a region of higher concentration to a region of lower concentration
- (d) Both can take place in either direction irrespective of concentration gradient

37. Which one of the following compounds is an inhibitor of  $\text{Na}^+ - \text{K}^+$  pump?

- (a) Arsenol
- (b) Dicumarol
- (c) Quabain
- (d) Phlorizin

38. Consider the following statements :

1. Black leopard can be found in Western Ghats.
2. Snow leopard is found only in Arunachal Pradesh.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

39. Most of the energy is liberated in the cells by oxidation of carbohydrates when

- (a) pyruvic acid is converted into acetyl CoA
- (b) pyruvic acid is converted into  $\text{CO}_2$  and  $\text{H}_2\text{O}$
- (c) glucose is converted into pyruvic acid
- (d) glucose is converted into alcohol and  $\text{CO}_2$

40. Oxidation of nutrients in catabolism releases energy which drives the synthesis of

- (a) cyclic AMP
- (b) AMP
- (c) ADP
- (d) ATP

41. The protoplasm essentially contains various types of proteins, which differ structurally as well as on the basis of their water solubility, like fibrillar, conjugated, globular, etc. Which one of the following groups belongs to conjugated globular protein?

- (a) Pseudoglobulin, protamine, histone
- (b) Chromoprotein, glycoprotein, nucleoprotein
- (c) Euglobulin, protamine, glutelin
- (d) Albumin, elastin, collagen

42. Among the following types of proteins, which one is the simple water-soluble globular protein molecule?

- (a) Collagen
- (b) Albumin
- (c) Elastin
- (d) Keratin

43. Which one of the following compounds cannot give rise to the net synthesis of glucose?

- (a) Acetyl coenzyme A
- (b) Glycerol
- (c) Lactate
- (d) Oxaloacetate

44. In which one of the following groups of chemicals, all are neurotransmitters?

- (a) Somatostatin, serotonin, acetylcholine
- (b) Noradrenaline, somatostatin, threonine
- (c) Glycine, dopamine, melatonin
- (d) Acetylcholine, noradrenaline, dopamine

45. Consider the following statements :

1. Saxitoxin is produced by certain species of marine dinoflagellates.
2. Saxitoxin is neurotoxin that acts as selective sodium channel blocker.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

46. GABA (gamma-aminobutyric acid), which is released from the brain, is

- (a) excitatory
- (b) inhibitory
- (c) mixed type
- (d) sensory

47. In addition to heme of cytochromes  $a$  and  $a_3$ , cytochrome oxidase also contains two atoms of

- (a) copper
- (b) magnesium
- (c) sulphur
- (d) nitrogen

48. Consider the following events in muscle contraction :

1. Action potential depolarizes the T-tubules.
2. Calcium binds to troponin-tropomyosin complex.
3. Actin combines with myosin ATP leading to cross-bridge activation.
4. Depolarization of T-tubules releases calcium from sarcoplasmic reticulum.

What is the correct sequence of the above?

- (a) 2-1-3-4
- (b) 1-4-3-2
- (c) 1-4-2-3
- (d) 2-1-4-3



49. Which one of the following glycolytic enzymes is inhibited by fluoride?

- (a) Lactate dehydrogenase
- (b) Pyruvate kinase
- (c) **Enolase**
- (d) Hexokinase

50. An enzyme, hexokinase, which catalyzes glucose to glucose-6-phosphate in glycolysis, is inhibited by glucose-6-phosphate. This is an example for

- (a) **feedback allosteric inhibition**
- (b) positive feedback inhibition
- (c) competitive inhibition
- (d) non-competitive inhibition

51. When necessary, pyruvate can be converted to oxaloacetate in a reaction catalyzed by pyruvate carboxylase. Pyruvate carboxylase activity is enhanced by

- (a) **ATP**
- (b) cAMP
- (c) citrate
- (d) acetyl CoA

52. Consider the following physiological processes :

1. Substrate level phosphorylation
2. Citric acid cycle
3. Oxidative phosphorylation
4.  $\beta$ -oxidation

Which of the above are common to carbohydrate and fatty acid catabolism?

- (a) 1 and 2
- (b) 1 and 3
- (c) **2 and 3**
- (d) 1 and 4

53. Mammals have several classes of hormones distinguishable by their mode of action. Which one of the following groups of hormones acts through nuclear receptor?

- (a) Peptide, amine and eicosanoid
- (b) Peptide, steroid and retinoid
- (c) **Steroid, retinoid and thyroid**
- (d) Steroid, retinoid and eicosanoid

54. Which of the following hormones is proteinaceous in nature and is secreted by steroid-producing organ under special physiological state?

- (a) Epinephrin
- (b) Noradrenaline
- (c) Thyroxin
- (d) **Relaxin**

55. Which one of the following groups is of nutritionally essential amino acids?

(a) Tyrosine, valine, tryptophan

(b) Glycine, cystine, valine

(c) Histidine, isoleucine, threonine

(d) Tryptophan, leucine, glycine

56. Which of the following isomeric forms are biologically active in mammals?

(a) D-amino acids and D-sugars

(b) D-amino acids and L-sugars

(c) L-amino acids and L-sugars

(d) L-amino acids and D-sugars

57. The middle piece of a mammalian sperm includes which one of the following sets of structures?

(a) Golgi apparatus, mitochondria and centriole

(b) Golgi apparatus, mitochondria and axial filament

(c) Golgi apparatus, centriole and axial filament

(d) Mitochondria, centriole and axial filament

58. The process that sperm undergoes in female genital tract of mammals before fertilization is called

(a) decapacitation

(b) capacitation

(c) activation

(d) deactivation

59. The type of enzymes released by sperm acrosome at the time of acrosome reaction during fertilization is

(a) ligase

(b) peptidase

(c) hydrolase

(d) dehydrogenase

60. In eutherian mammals, the extra-embryonic membrane(s) taking part in the formation of placenta is/are

(a) yolk sac

(b) allantois

(c) yolk sac and chorion

(d) chorion and allantois

61. Torsion and detorsion are phenomena in many molluscs leading to the formation of asymmetrical body. Spirally twisted shell in these forms may be dextral or sinistral. But such phenomenon is absent in

(a) *Helix nemoralis*

(b) *Anodonta cygnea*

(c) *Pila globosa*

(d) *Achatina fulica*

62. Gastropods with one gill and one auricle belong to

(a) Pulmonata

(b) *Pectinibranchia*

(c) Pelecypoda

(d) Scaphopoda

63. A primitive mollusc represents a sort of connecting link between Annelida and Mollusca. Which one of the following is correct?

(a) *Lirnaea*

(b) *Neomenia*

(c) *Neopilina*

(d) *Nucula*

64. Echinoderms are considered to be the most evolved invertebrates, because they

(a) are enterocoelic

(b) show resemblance with chordates in their embryonic development

(c) have a great power of regeneration

(d) are schizocoelic

65. Consider the following :

1. Maxilla

2. Jugal

3. Squamosal

4. Quadrate

Which two bones of the above join to form the zygomatic arch in the skull of rabbit?

(a) 1 and 2

(b) 2 and 3

(c) 2 and 4

(d) 1 and 4

66. The classification of reptiles is based on

- (a) the presence or absence of epidermal scales on the body
- ✓ (b) the presence or absence of temporal fossae in the skull
- (c) the presence or absence of cleidoic eggs
- (d) the presence or absence of movable eyelids

67. Exposed external gill slits, jaws and lack of bony endoskeleton are the characteristics of

- (a) Agnatha
- (b) Osteichthyes
- ✓ (c) Chondrichthyes
- (d) Choanichthyes

68. Presence of foramen of Panizzae is an important characteristic of

- (a) Chelonia
- ✓ (b) Ophidia
- (c) Crocodilia
- (d) Cotylosauria

69. *Chimaera monstrosa* (ratfish) is an example of an aberrant group of cartilaginous fish which belongs to

- (a) Actinopterygii
- (b) Chondrostei
- (c) Holostei
- ✓ (d) Holocephali

70. The ampulla of Lorenzini is the organ which is

- ✓ (a) present on dorsal and ventral surfaces of the head of sharks, embedded in the skin and acts as thermoreceptor organ
- (b) present on the ventral surface of the body of sharks, embedded in the skin and acts as lubricating organ
- (c) present in the membranous labyrinth of sharks and acts as balancing organ
- (d) present in the water vascular system of starfishes and acts as locomotory organ

71. Which one of the following is absent in Bugula?

- (a) Avicularium
- (b) U-shaped alimentary canal
- (c) Lophophore
- (d) Definitive excretory organs

72. If the activity of the contractile vacuole in Amoeba is experimentally inhibited, the protozoan

- (a) instantly undergoes binary fission, and develops new contractile vacuoles, one each in the two daughter cells
- (b) forms a cyst around itself, and waits for a favourable time and condition
- (c) contracts, and finally appears as a mini-animalcule
- (d) swells, and may finally burst

73. Which one of the following statements on Sycon is correct?

- (a) It is profusely found in rivers, lakes and ponds
- (b) In it, asexual reproduction is totally absent
- (c) No larval form has been reported
- (d) During sexual reproduction, the choanocytes act as carrier cells

74. 'Apolysis' process in Taenia signifies certain changes in which

- (a) mature proglottids get detached from the body
- (b) immature proglottids become sexually mature
- (c) gravid proglottids are detached from the body
- (d) mature proglottids form male and female reproductive organs

75. The infective juvenile of *Ascaris* moults for the third time to form the fourth larva. Where does it take place among the following?

- (a) In the soil outside the host body
- (b) In the intestine of the host
- (c) In the alveoli of lungs of the host
- (d) In the right side of heart of the host

76. In which segments of the earthworm, blood from the supraoesophageal blood vessel is directed into the ventral blood vessel?

- (a) 7th and 9th
- (b) 10th and 11th
- (c) 12th and 13th
- (d) 9th and 11th

77. Which of the following sets of parts/constituents of the body of *Pheretima* is associated with excretion?

- (a) Chlorogogen cells and nucleated cells
- (b) Mucocytes and Chlorogogen cells
- (c) Phagocytes and Chlorogogen cells
- (d) Phagocytes and Mucocytes

78. In *Palaemon* the numbers of cephalic, thoracic and abdominal appendages are

- (a) 05, 08 and 06 respectively
- (b) 06, 07 and 06 respectively
- (c) 06, 06 and 07 respectively
- (d) 07, 07 and 05 respectively

79. With reference to scorpion, consider the following statements :

1. Its respiratory pigment includes copper-containing protein.
2. Its coxal glands help in reproduction.
3. Its book lungs are the respiratory organs.
4. Its heart consists of seven chambers.

Which of the statements given above are correct?

- (a) 1, 2, 3 and 4
- (b) 1, 2 and 3 only
- (c) 1, 3 and 4 only
- (d) 2, 3 and 4 only

80. Epimeron in the appendages of prawn is a structure which

- (a) connects the appendages to its pleuron by a plate
- (b) forms the base of maxillary appendages
- (c) cushions the chelate leg base
- (d) cushions the non-chelate appendages

81. The common garden snail, Pila globosa, lays its eggs

- (a) in singles in water
- (b) in a mass that floats in water
- (c) in a mass attached to aquatic plants
- (d) in a mass on moist soil

82. What is the correct sequence of the course of blood circulation in Pila?

- (a) Heart → cephalic aorta → perivisceral sinus → branchiorenal sinus → ctenidium
- (b) Heart → perivisceral sinus → cephalic aorta → branchiorenal sinus → ctenidium
- (c) Heart → cephalic aorta → branchiorenal sinus → perivisceral sinus → ctenidium
- (d) Heart → branchiorenal sinus → perivisceral sinus → cephalic aorta → ctenidium

83. Which of the following functions performed by Tiedemann's bodies in starfishes is correct?

- (a) They are digestive glands
- (b) They are excretory glands
- (c) They are reproductive bodies

(d) They are lymphatic glands to manufacture the amoebocytes

84. Which of the following statements is not correct for Balanoglossus?

- (a) Notochord runs from end to end of the body and extends to the head region
- (b) Paired and median fins are present
- (c) Notochord persists throughout the life
- (d) The larva of Balanoglossus is known as tornaria larva

85. Which one of the following reptiles has a complete secondary palate?

(a) Crocodile

(b) Lizard

(c) Snake

(d) Tortoise

86. In *Scoliodon*, the base of the placoid scale is tied with the stratum compactum by

(a) vitro-dentine

(b) Sharpey's fibre

(c) prototrochs

(d) stratum germinativum

87. Filter feeding is basically found in a number of invertebrates and protochordates. However, this phenomenon is seen in one mammal. Which is the animal in question?

(a) Dolphin

(b) Sperm whale

(c) Walrus

(d) Baleen whale

88. The additional salivary gland present in canine species is

(a) molar gland

(b) retrolingual gland

(c) orbital gland

(d) Harder's gland

89. In which of the following, the pneumatic duct arises from the ventral side of oesophagus?

(a) *Acipenser*

(b) *Sturgeon*

(c) *Ceratodus*

(d) *Lepidosiren*

90. In *Columba*, name the aortic arch which lost its connection with the dorsal aorta

(a) Left third arch

(b) Fourth arch

(c) Fifth arch

(d) Right sixth arch



96. Mitosis promoting factor (MPF) has two key subunits—one is catalytic and the other is regulatory. Which one of the following is the regulatory subunit?

(a) cdk

(b) cyclin

(c) dynein

(d) dynactin

97. Synaptonemal complex helps in

(a) gamete formation

(b) recombination during cell division

(c) production of enzymes during cell division

(d) chromosomal movement towards poles

98. Consider the following statements related to mitosis of an animal cell:

1. Cells have least amount of DNA in  $G_1$  period.

2. The amount of DNA throughout interphase is not constant.

3. A  $G_2$  nucleus has maximum amount of DNA.

Which of the statements given above are correct?

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) 1, 2 and 3

99. Which one of the following descriptions best defines heterochromatin?

(a) Gene-rich regions of chromosomes enriched in unique sequence of DNA

(b) Chromatin that contains 'junk-DNA' and considered as 'evolutionary debris'

(c) Transcriptionally inactive and highly condensed regions of chromosome

(d) DNA rich in tandem repeats of intermediate sequence

100. A deletion in the short arm of chromosome 5 produces in humans a genetic disorder called

(a) cri du chat syndrome

(b) Down's syndrome

(c) Edwards' syndrome

(d) Patau's syndrome

101. Consider the following statements :

Carrier proteins are required for the transport across plasma membrane of

1. amino acids
2. glucose
3. nucleotides

Which of the statements given above is/are correct?

- (a) 1 and 2 only  
 (b) 2 only  
 (c) 2 and 3 only  
 (d) 1, 2 and 3

102. Match List-I with List-II and select the correct answer using the code given below the Lists :

List-I  
(Sex Chromosomes)

List-II  
(Animals)

- |                          |                                |
|--------------------------|--------------------------------|
| A. XY female, XX male    | 1. Grasshopper →               |
| B. XO female, XX male    | 2. Honeybee                    |
| C. XX female, XO male    | 3. <i>Pumea</i>                |
| D. $2n$ female, $n$ male | 4. Silkworm <i>Lepidoptera</i> |

Code :

(a) A B C D  
 3 2 1 4

(b) A B C D  
 3 1 2 4

(c) A B C D  
 4 3 2 1

(d) A B C D  
 4 3 1 2

103. Match List-I with List-II and select the correct answer using the code given below the Lists :

List-I  
(Organisms)

List-II  
(Characteristics of Genomes)

- |                        |   |
|------------------------|---|
| A. Phage X174          | 1. Linear double-stranded DNA, which may form ring    |
| B. $T_2$ Bacteriophage | 2. Linear double-stranded DNA, but does not form ring |
| C. SV40                | 3. Circular single-stranded DNA                       |
| D. Phage $\lambda$     | 4. Circular double-stranded DNA                       |

Code :

(a) A B C D  
 1 2 4 3

(b) A B C D  
 3 4 2 1

(c) A B C D  
 3 2 4 1

(d) A B C D  
 1 4 2 3

104. Consider the following statements :

cDNA libraries are prepared from isolated

1. tRNAs
2. rRNAs
3. mRNAs

Which of the statements given above is/are correct?

- (a) 1 and 2
- (b) 2 only
- (c) 2 and 3
- (d) 3 only

105. Which of the following statements about DNA is **not** correct?

- (a) The double helix is right-handed
- (b) The nitrogenous bases are stacked on the inside of the helix
- (c) The two strands of the double helix are anti-parallel
- (d) The bases of the two polynucleotides interact by covalent bonding

106. Acridine dyes such as ICR-170 and ICR-191 are very powerful mutagens that induce

- (a) point mutations
- (b) frameshift mutations
- (c) thiamine dimer formation
- (d) suppressor mutations

107. Match List-I with List-II and select the correct answer using the code given below the Lists :

List-I

List-II

- |           |                             |
|-----------|-----------------------------|
| A. pBR322 | 1. Vector                   |
| B. EcoRI  | 2. Transgenic monkey        |
| C. Andy   | 3. Restriction endonuclease |

Code :

- (a) A B C  
1 2 3
- (b) A B C  
2 3 1
- (c) A B C  
1 3 2
- (d) A B C  
3 1 2

108. Lesch-Nyhan disorder in humans is

- (a) sex-linked recessive
- (b) sex-linked dominant
- (c) autosomal recessive
- (d) autosomal dominant

109. Which one of the following terms perfectly defines "genes located on the same chromosome without reference to their linkage relationship"?

- (a) Syntenic
- (b) Linkage
- (c) Linker DNA
- (d) Inheritance

115. Both *Hydra* and *Planaria* are metazoans. Though they belong to different phyla, they possess one common interesting feature. What is that common feature?

- (a) Presence of flame cells
- (b) Phenomenon of regeneration
- (c) Polymorphism
- (d) Bilateral symmetry

116. The body cavity of *Ascaris* cannot be called coelom, because

- (a) the cavity is perivisceral
- (b) the gut and gonads lie within the cavity
- (c) the cavity contains pseudo-coelomocytes
- (d) the cavity lacks epithelial lining

117. Which one of the following is the only member of the class Merostomata of phylum Arthropoda to survive in the modern times with practically no evolutionary change since this first appeared and is known as living fossil?

- (a) Acorn worm
- (b) Barnacle
- (c) *Limulus*
- (d) *Peripatus*

118. The genus *Mysis* can be distinguished from mysis larva by the presence of

- (a) optic stalk
- (b) well-developed telson
- (c) statocyst
- (d) biramous thoracic appendages

119. Peritrophic membrane is associated with a part of the digestive system in

- (a) *Ascaris*
- (b) *Nereis*
- (c) *Antedon*
- (d) *Periplaneta*

120. The schizocoelous coelomates looking like giant worms but devoid of gut and mouth, belong to

- (a) Turbellaria
- (b) Pogonophora
- (c) Bryozoa
- (d) Ectoprocta