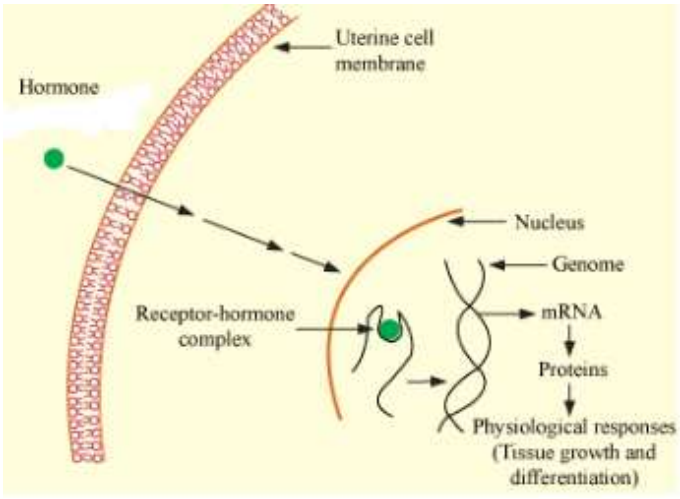
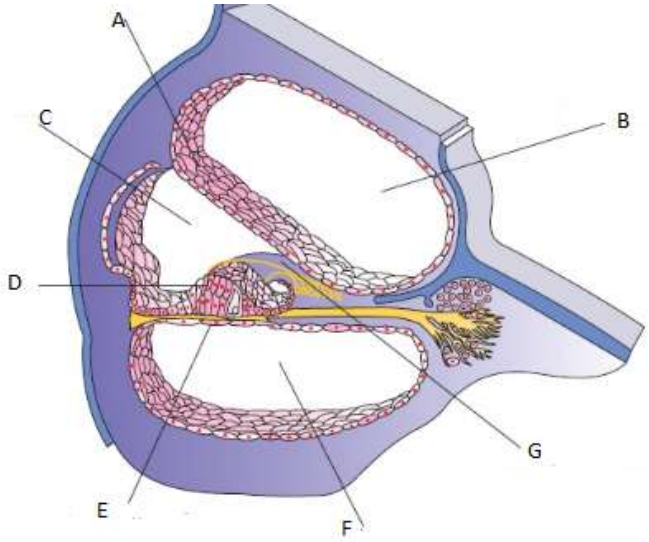
1. What is correct for the hormone whose mechanism of action is shown in the given diagram?



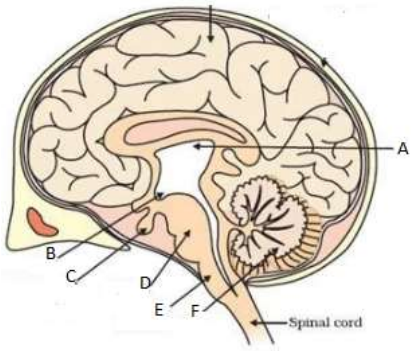
1. This hormone will most likely be synthesized by the neural cells of the hypothalamus
2. This hormone cannot be thyroxin or triiodothyronine
3. This hormone can be a derivative of cholesterol
4. This hormone will have an almost instantaneous onset of action

2. Identify the correct statement regarding the following diagram:



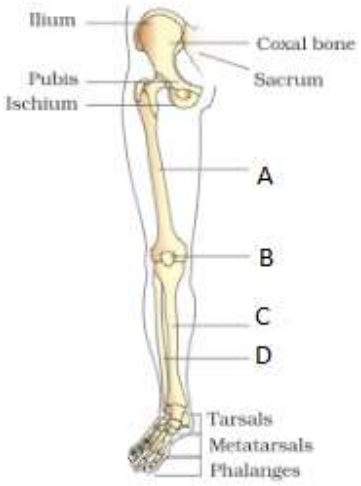
1. B and F are filled with endolymph
2. C is filled with perilymph
3. Hair cells press against E to generate nerve impulses
4. D is the sensory organ of hearing and has auditory receptors

3. A major coordinating center for sensory and motor signaling in the human brain is shown in the given sagittal section by the letter:



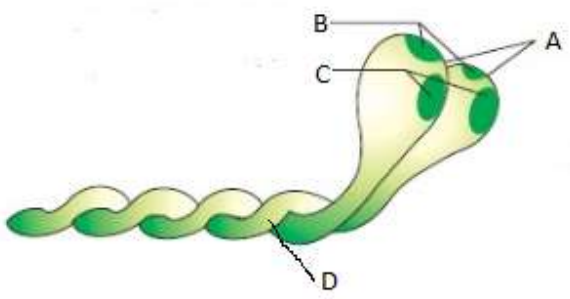
1. A
2. B
3. C
4. D

4. In the given diagram of the lower limb bones of a human, a sesamoid bone is depicted by the letter:



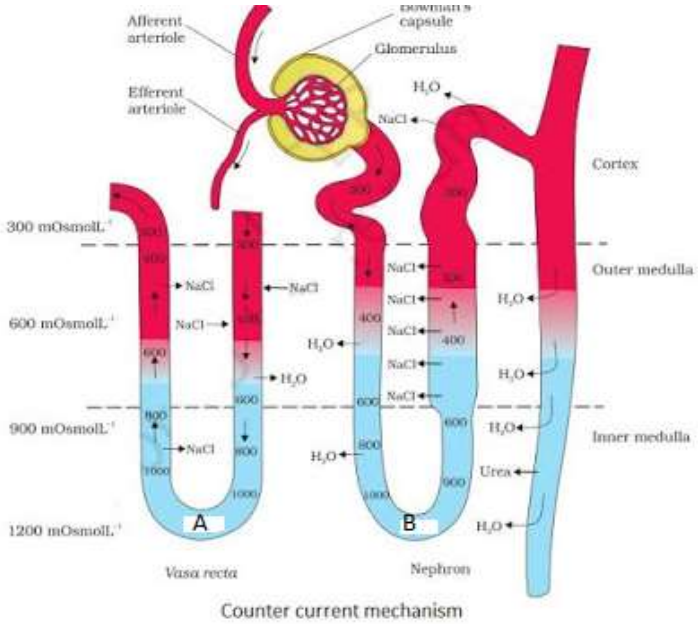
1. A
2. B
3. C
4. D

5. In the molecule shown in the given diagram, ATPase activity is present in:



1. A
2. B
3. C
4. D

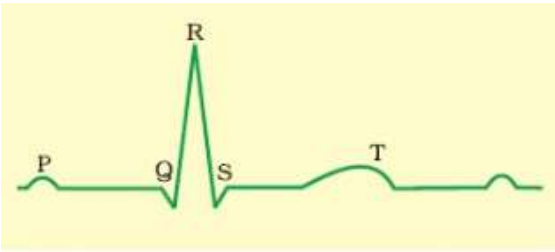
6. In the given diagram what would be the value of osmolality of fluid at points A and B respectively?



Counter current mechanism

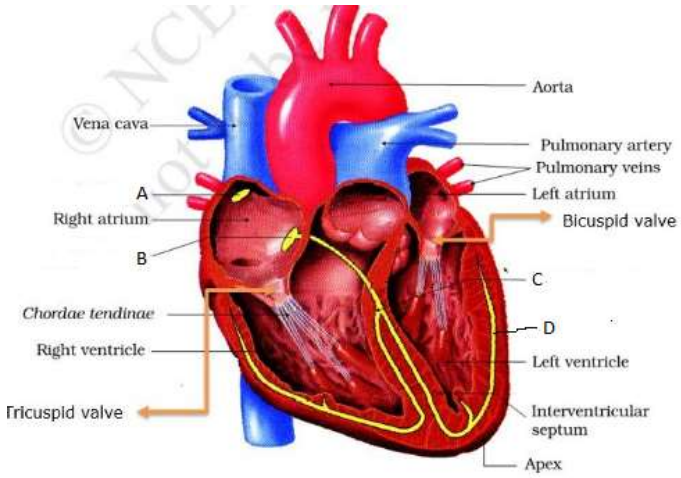
1. 1000 and 1000
2. 1200 and 1000
3. 1000 and 1200
4. 1200 and 1200

7. The following is the diagrammatic representation of standard ECG. Identify the correct statement:



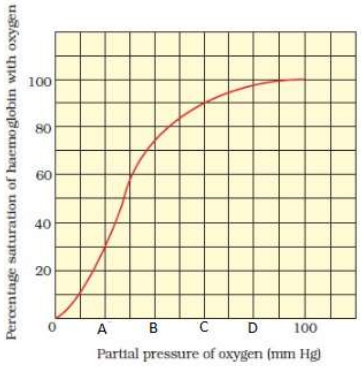
1. P is caused by atrial repolarization
2. Q, when present, always shows myocardial ischemia
3. QRS complex is due to time taken by impulse from SA node to AV node
4. T is caused by ventricular reploarization

8. In the given section of the human heart which part ensures that atria contract prior to the ventricles?



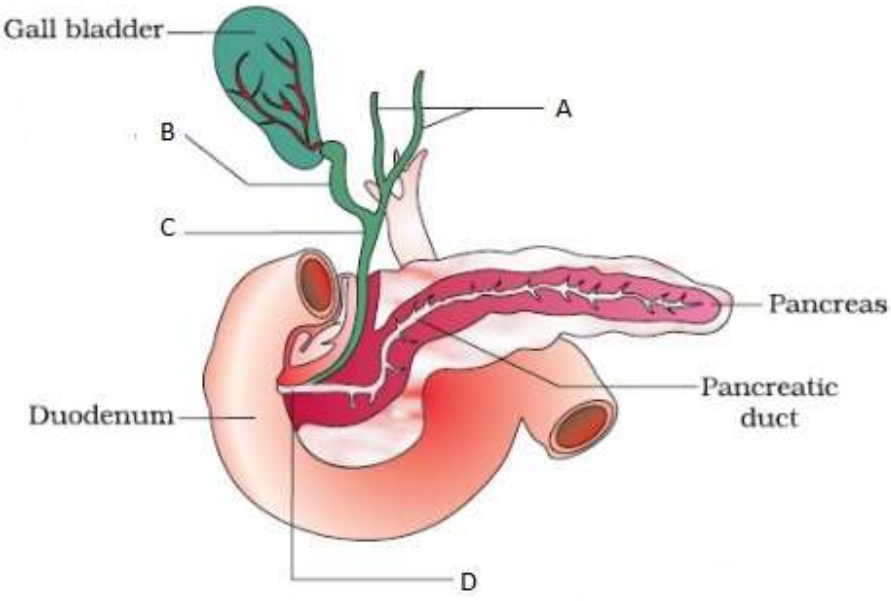
1. A
2. B
3. C
4. D

9. In the given diagram of the oxygen dissociation curve, under normal physiological conditions, the partial pressure of oxygen at the tissue level is represented by:



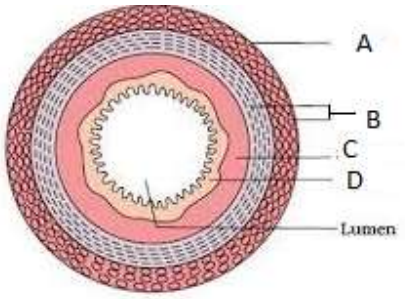
1. A
2. B
3. C
4. D

10. Sphincter of Oddi will guard the opening of:



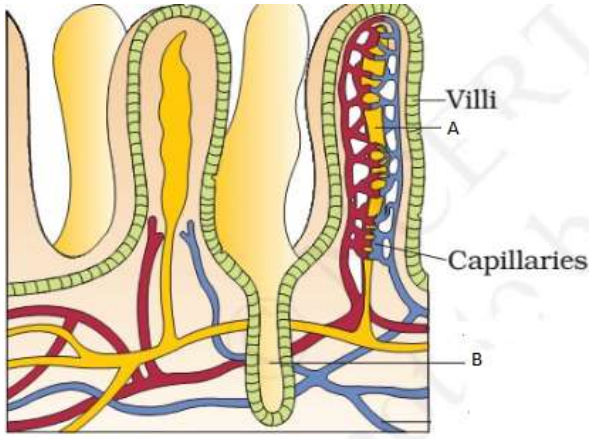
1. A
2. B
3. C
4. D

11. The intrinsic nervous system that is responsible for peristalisis is present in which part shown in the given transverse section of the human gut?



1. A
2. B
3. C
4. D

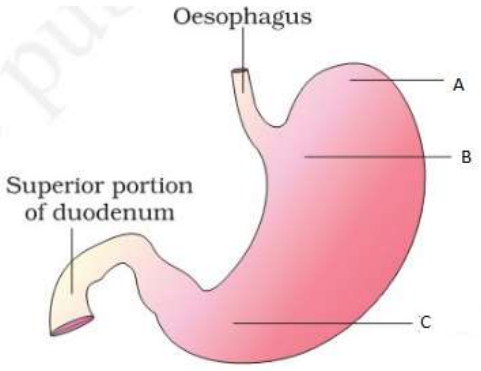
12. Study the given diagram and choose the correct statements:



I. A is involved in the absorption of fatty acids
II. B is a gland

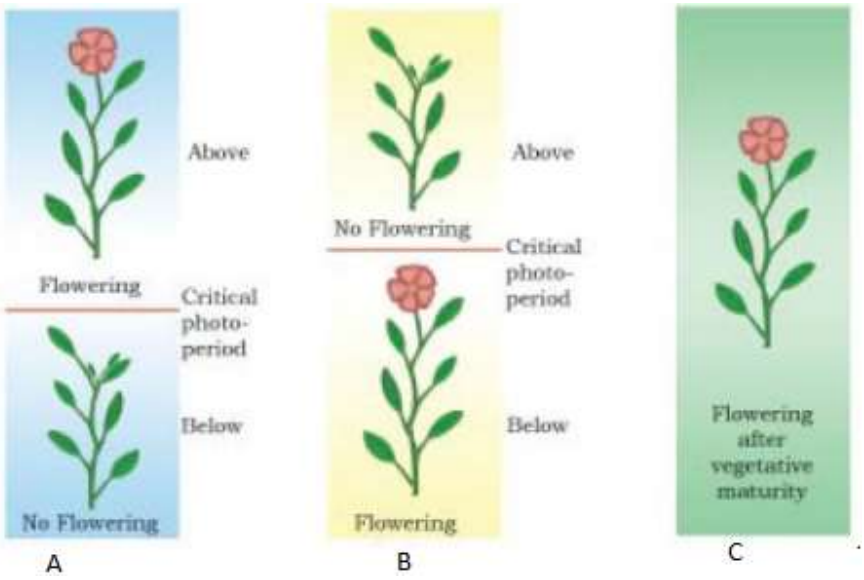
1. Only I
2. Only II
3. Both I and II
4. Neither I nor II

13. In the given diagram showing anatomical regions of the human stomach, A, B and C respectively represent:



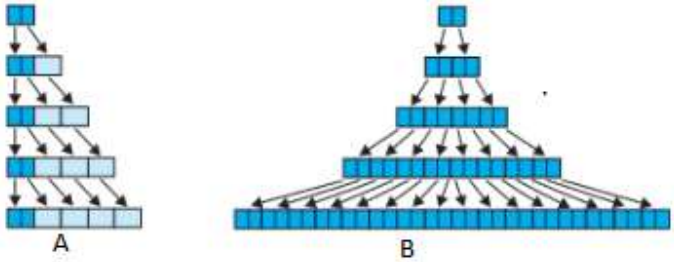
1. Fundus, Cardia and Pylorus
2. Cardia, Pylorus and Fundus
3. Fundus, Pylorus and Cardia
4. Pylorus, Cardia and Fundus

14. With respect to photoperiodism, the short day plant, the long day plant and day neutral plant are represented respectively by:



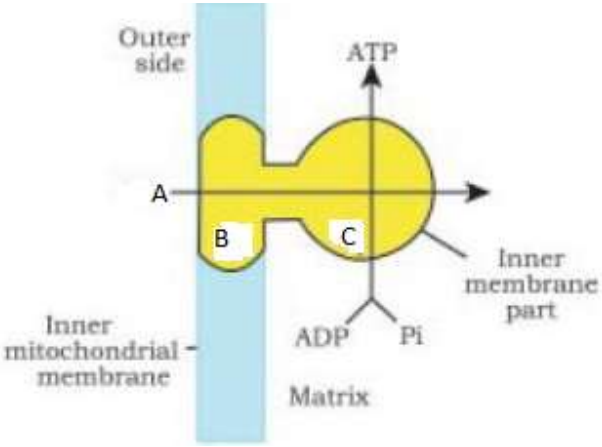
1. A, B and C
2. B, A and C
3. C, B and A
4. A, C and B

15. The growth a root elongating at a constant rate will be represented by:



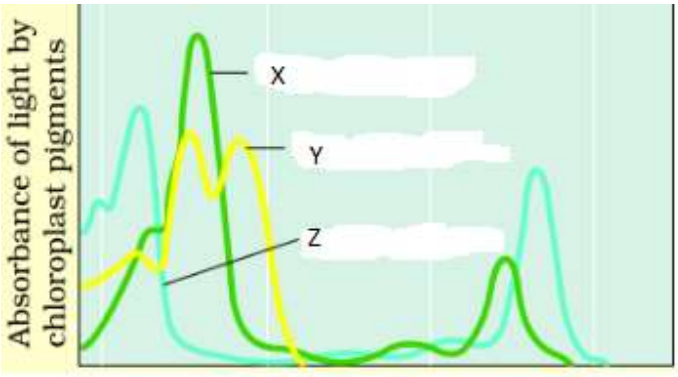
1. A only
2. B only
3. Both A and B
4. Neither A nor B

16. In the given diagrammatic representation of ATP synthesis in mitochondria, A, B and C are respectively:



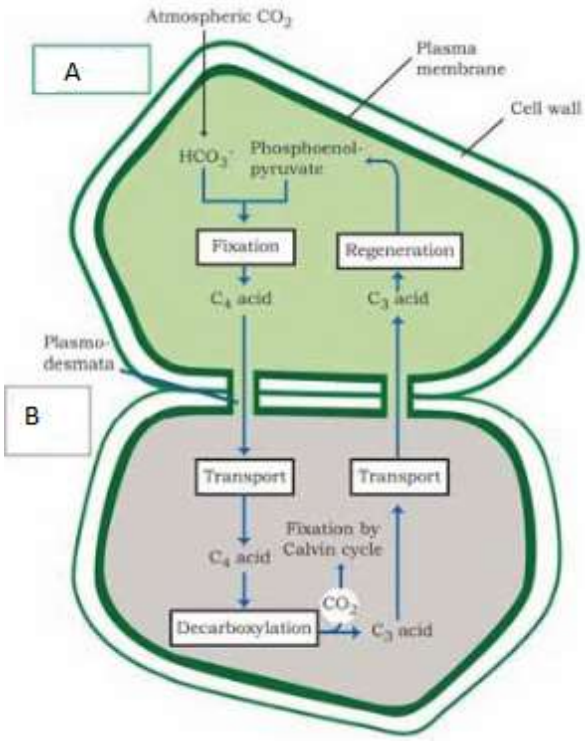
1. 2 H^+, F_0 and F_1
2. 2 H^+, F_1 and F_0
3. 4 H^+, F_0 and F_1
4. 4 H^+, F_1 and F_0

17. In the given diagram X, Y and Z respectively represent the absorption spectrum of:



1. Chlorophyll a, Chlorophyll b and Carotenoids
2. Chlorophyll b, Chlorophyll a and Carotenoids
3. Chlorophyll b, Carotenoids and Chlorophyll a
4. Chlorophyll a, Carotenoids and Chlorophyll b

18. In the diagrammatic representation of the Hatch and Slack pathway, A and B respectively represent:

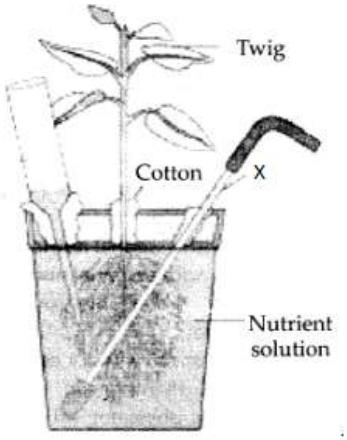


1. Mesophyll cells and Bundle sheath cells
2. Bundle sheath cells and Mesophyll cells
3. Bundle sheath cells and Pallisade cells
4. Mesophyll cells and Guard cells

19. What type of reaction is shown in the given figure?

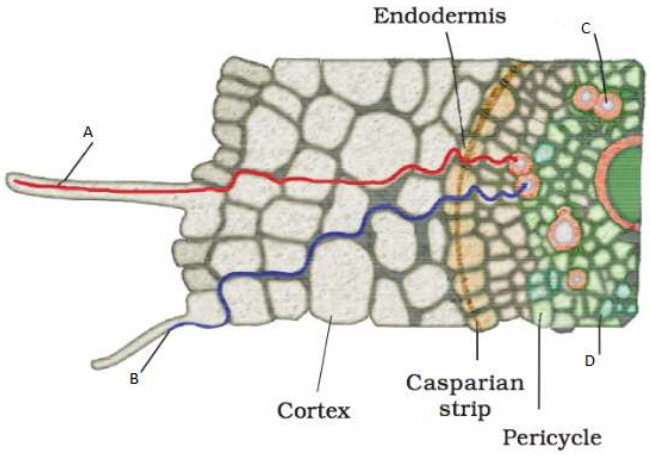
1. Deamination
2. Reductive amination
3. Transamination
4. Nitrogenation

20. In the given diagram of a typical set up for nutrient solution culture, the purpose of X is:



1. Addition of water
2. Addition of nutrients
3. Removal of wastes
4. Aeration

21. In the diagram given below showing the pathway of water movement in the root, A, B, C and D respectively represent:

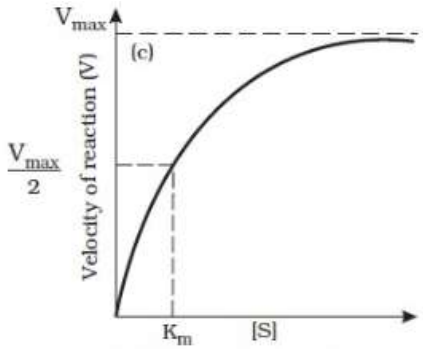


1. Symplastic pathway, Apoplastic pathway, Phloem and Xylem
2. Apoplastic pathway, Symplastic pathway, Phloem and Xylem
3. Symplastic pathway, Apoplastic pathway, Xylem and Phloem
4. Apoplastic pathway, Symplastic pathway, Xylem and Phloem

22. The following cell, undergoing mitosis, is at:

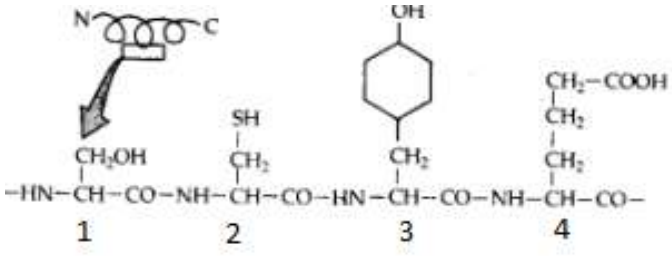
1. Early prophase
2. Late prophase
3. Transition to metaphase
4. Early metaphase

23. Given below is the graph showing the effect of substrate concentration on enzyme activity. In the presence of a competitive inhibitor, when the concentration of the substrate is progressively increased:



1. The K_m value is increased but the reaction will not achieve V_{max}
2. The K_m value is increased but the reaction can ultimately achieve V_{max}
3. The K_m value is decreased but the reaction will not achieve V_{max}
4. The K_m value is decreased but the reaction can ultimately achieve V_{max}

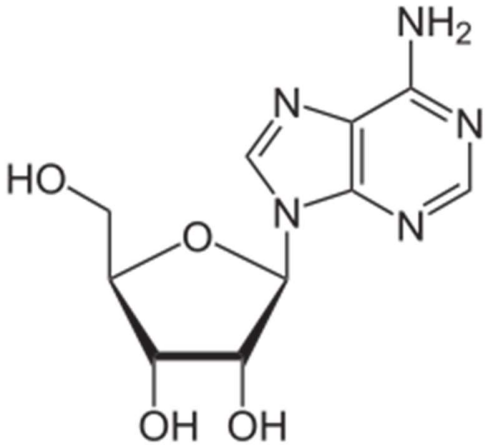
24. Study the primary structure of a part of a hypothetical protein and choose the correct statements:



I. 1 is Serine
II. 2 is sulfur containing amino acid and can be methionine
III. 3 is aromatic amino acid and can be tyrosine
IV. 4 is an acidic amino acid

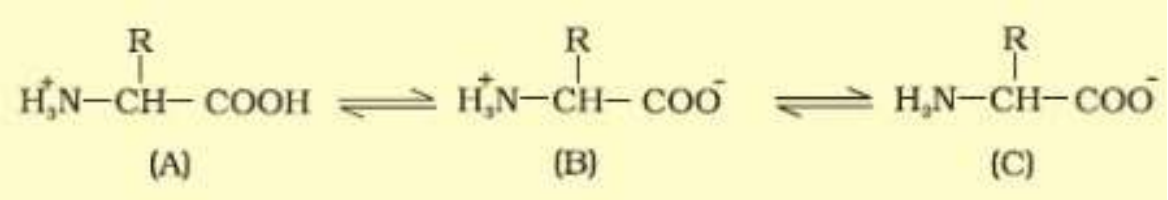
1. I, II and III only
2. I, III and IV only
3. II, III and IV only
4. I, II, III and IV

25. The compound shown below:



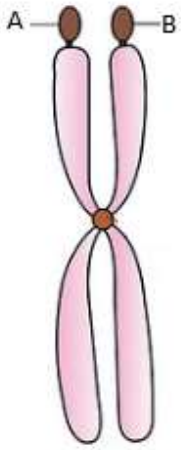
1. is a component of ATP molecule
2. is most commonly found in ori region of DNA
3. can have enzymatic activity
4. may be a component of cell membrane

26. The zwitterion is shown by:



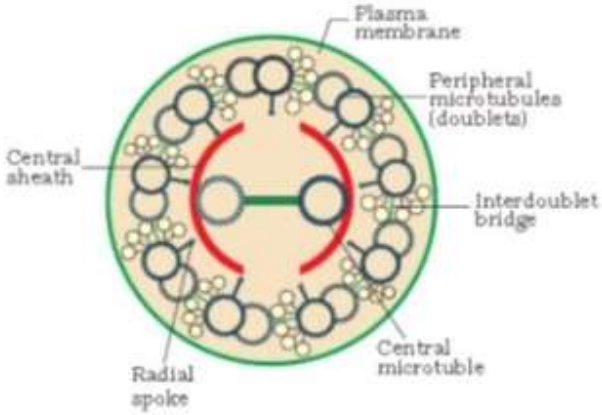
1. Only A
2. Only B
3. Both A and C
4. A, B and C

27. What is true regarding the chromosome shown in the diagram given below?



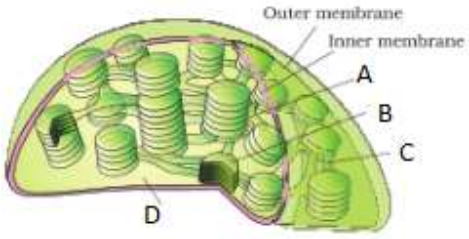
1. It is a metacentric chromosome with A called satellite and B called secondary constriction
2. It is a metacentric chromosome with B called satellite and A called secondary constriction
3. It is a submetacentric chromosome with A called satellite and B called secondary constriction
4. It is a submetacentric chromosome with B called satellite and A called secondary constriction

28. Identify the correct statement regarding the part of cell the structure of which is shown in the given diagram:



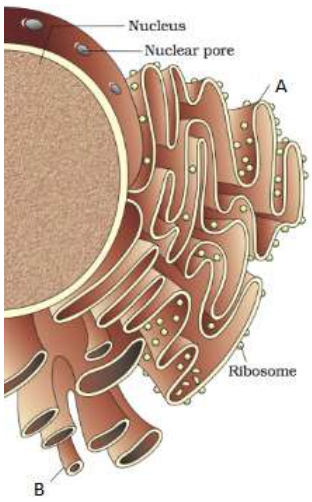
1. It is not found in the plant cells
2. It serves to provide attachment with surface for a bacterial cell
3. The structure is made of protein called as flagellin
4. It can be used for movement by a eukaryotic cell

29. In the given diagram of chloroplast enzymes required for the synthesis of carbohydrates and proteins are located in:



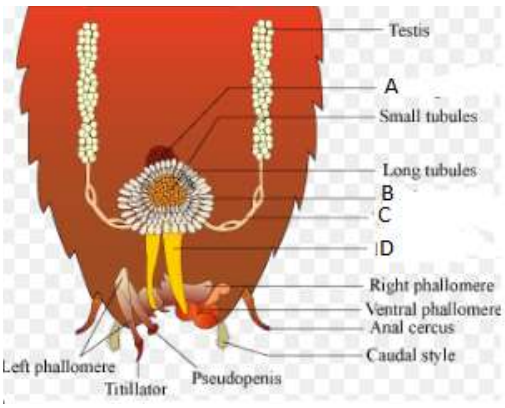
1. A
2. B
3. C
4. D

30. In the given diagram, what is true for both A and B?



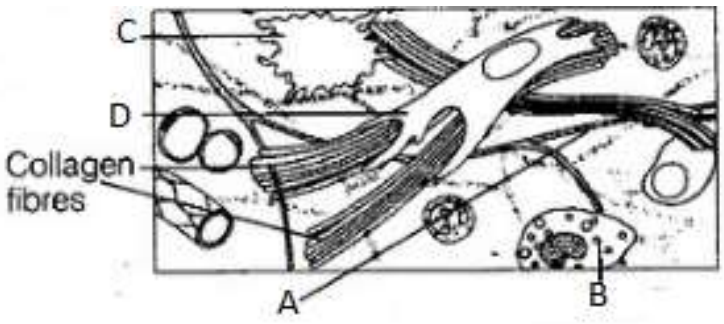
1. They are involved in protein synthesis
2. They synthesize steroidal hormones in animal cells
3. They are a part of endomembranous system of a eukaryotic cell
4. They are continuous with the outer membrane of the nucleus

31. Identify the structure in a male cockroach where the sperms are stored?



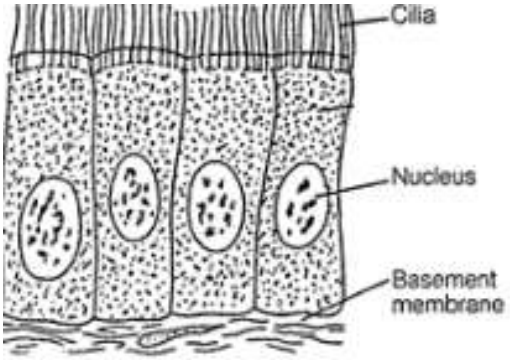
1. A
2. B
3. C
4. D

32. In the given diagram of areolar tissue, identify a phagocytic cell:



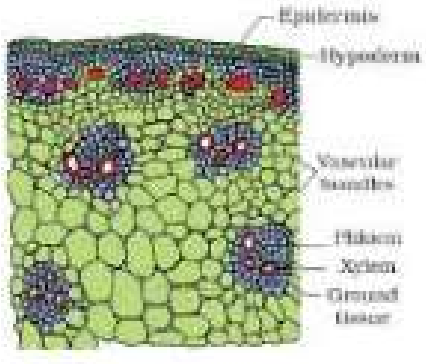
1. A
2. B
3. C
4. D

33. The epithelium shown in the given diagram is found in:



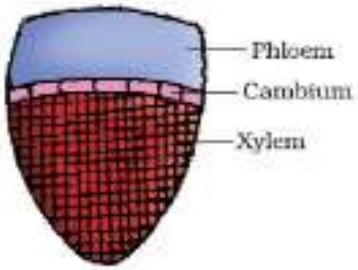
1. Proximal Convoluted Tubule
2. Small intestine
3. Fallopian tube
4. Thyroid follicle cells

34. The given transverse section is of:



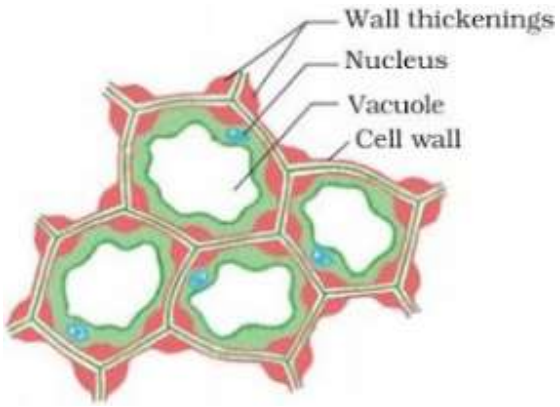
1. Monocot stem
2. Dicot stem
3. Monocot root
4. Dicot root

35. The vascular bundle shown in the diagram is most likely to be seen in:



1. Monocot stem
2. Dicot stem
3. Monocot root
4. Dicot root

36. The main function of the plant tissue shown below is:



1. Storage of nutrients
2. Providing buoyancy to submerged plants
3. Mechanical support to growing parts of a plant
4. Increase in the length of the plant

37. The floral diagram shown in the given diagram can be of:

1. A plant that produces a chemical that can disrupt mitotic spindle
2. Deadly night shade
3. Indigofera plant, a source of dye
4. A pulse plant

38. The type of placentation shown in the given diagram is seen in:

1. China rose
2. Mustard
3. Marigold
4. *Dianthus*

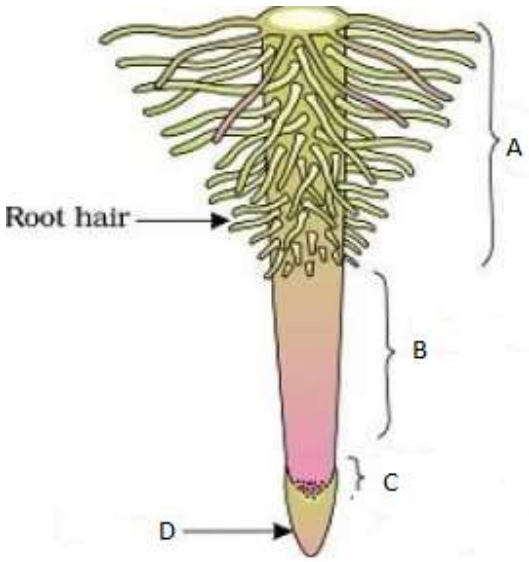
39. The type of aestivation seen in *Calotropis* is represented by:

1. 
2. 
3. 
4. 

40. The condition of the ovary shown in the given diagram can be described as:

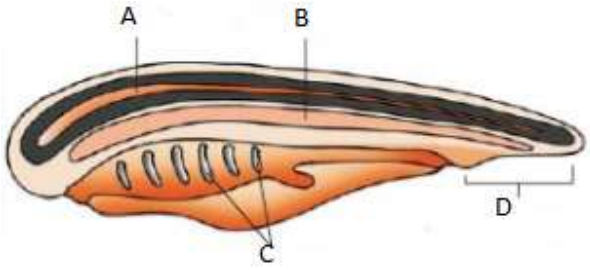
1. Perigynous
2. Epigynous
3. Superior
4. Half inferior

41. The region responsible for growth in the length of root is:



1. A
2. B
3. C
4. D

42. The character that gives the Phylum Chordata is shown by:



1. A
2. B
3. C
4. D

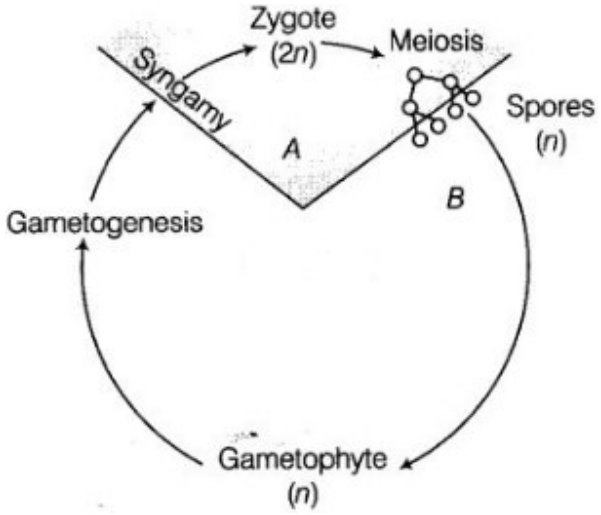
43. The structure shown in the given diagram is characteristically seen in the Phylum:

1. Porifera
2. Ctenophora
3. Cnidaria
4. Molluska

44. An animal with the following body wall organization will not have:

1. Cepahlization
2. Three germ layers
3. Bilateral symmetry
4. A complete digestive tract

45. The life cycle pattern shown in the given diagram is not seen in:

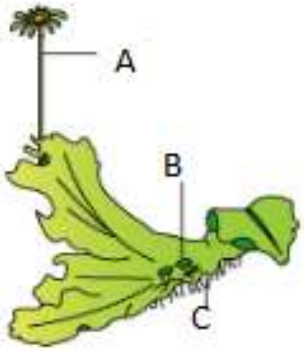


1. *Chlamydomanas*
2. *Spirogyra*
3. *Volvox*
4. *Ectocarpus*

46. The given diagram shows:

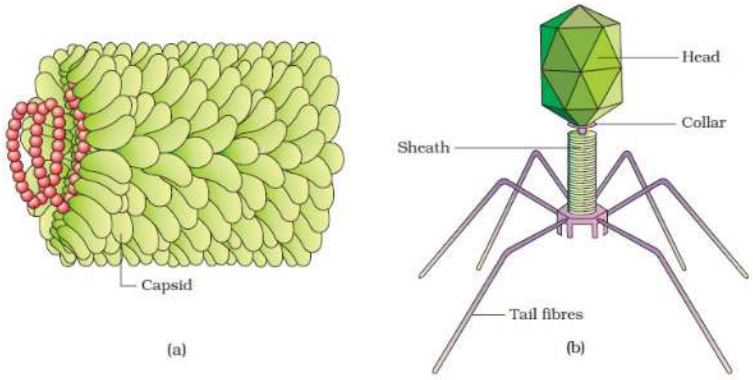
1. An alga that lacks flagellated cells
2. A liverwort
3. A heterosporous pteridophyte
4. A gymnosperm with non motile sperms

47. Identify the statement that most accurately describes the plant shown in the given figure:



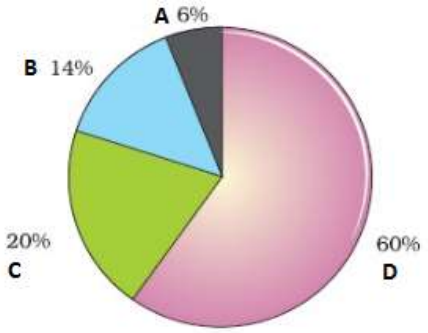
1. This the male prothallus of *Marchantia*; A is antheridiophore and B is Gemma cup
2. This the female prothallus of *Marchantia*; A is archegoniophore and B is Gemma cup
3. This the male prothallus of *Sphagnum*; A is antheridiophore and B is Gemma cup
4. This the female prothallus of *Spahgnum*; A is archegoniophore and B is Gemma cup

48. What is true for both (a) and (b)?



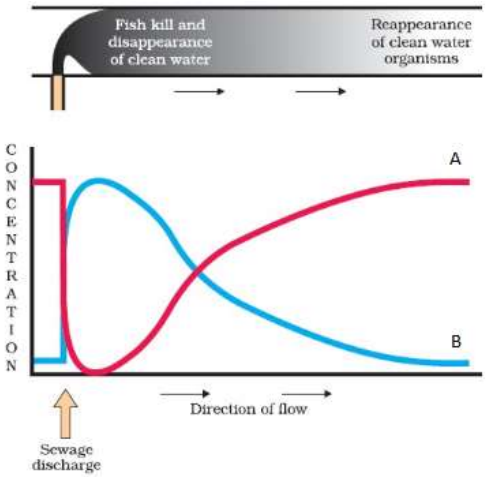
1. RNA is the genetic material
2. Capability to infect bacteria
3. Being obligate endoparasites
4. Can be killed by antibiotics

49. The following pie chart shows the relative contribution of radiatively active gases to greenhouse effect. The contribution of N_2O is shown by:



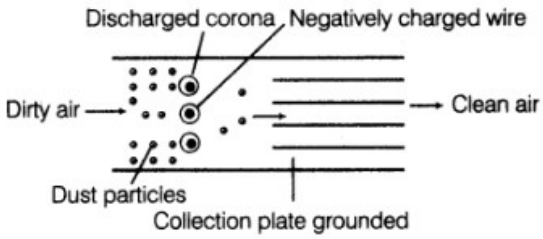
1. A
2. B
3. C
4. D

50. The following diagram shows the effect of sewage discharge on some important characteristics of a river. What can be A and B respectively?



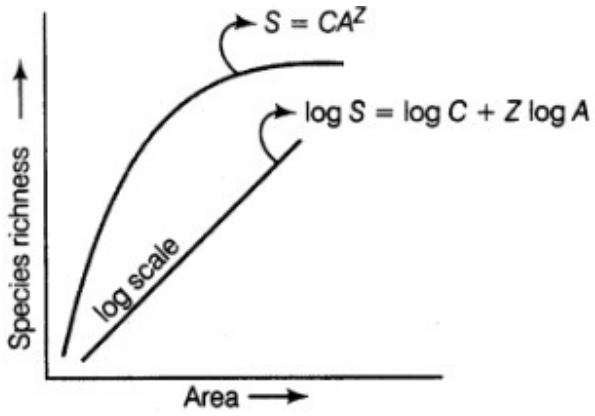
1. BOD and DO
2. DO and BOD
3. BOD and COD
4. COD and BOD

51. The following diagram shows the working of an electrostatic precipitator. Identify the correct statement:



1. A negative voltage ionizes the air around the wire that in turn ionizes the particles in the air stream.
2. They are able to remove about 75% of the particulate matter present in the exhaust from a thermal power plant.
3. The velocity of air between the plates must be rapid enough to allow electrostatic precipitation of the dust particles.
4. PM 2.5 dust particles are more easily removed by the electrostatic precipitator than the larger sized particulate matter.

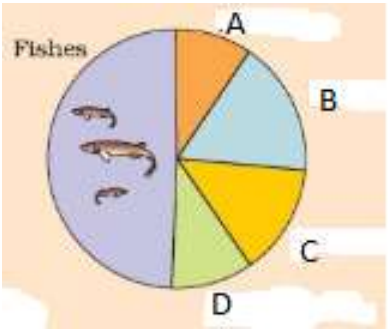
52. The following graph shows the species area relationship. Regression coefficient if shown by:



Showing species area relationship

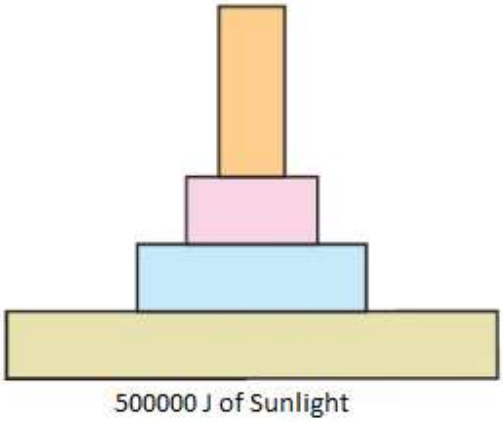
1. S
2. C
3. Z
4. log S

53. In the given pie chart showing the global biodiversity of vertebrates, the Amphibians and the Birds are respectively represented by:



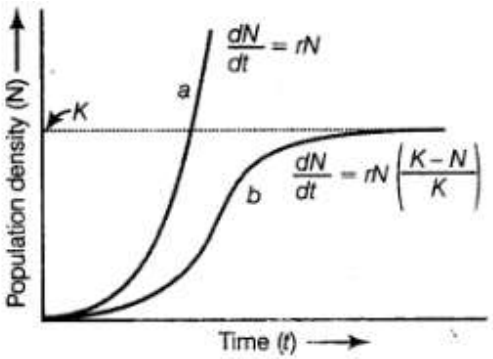
1. B and D
2. A and C
3. A and B
4. D and B

54. Given below is a hypothetical pyramid of energy. The amount of energy left at the level of secondary consumers would approximately be:



1. 10000 J
2. 1000 JU
3. 100 J
4. 50 J

55. What is true about the population growth curves shown in the figure given below:



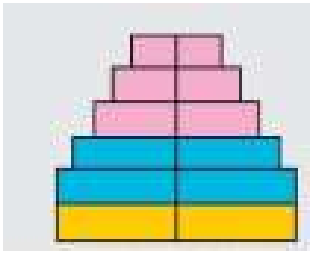
I. Curve a is seen when responses are not limiting

II. Curve b is seen when responses are limiting

III. [K-N]/K is the carrying capacity

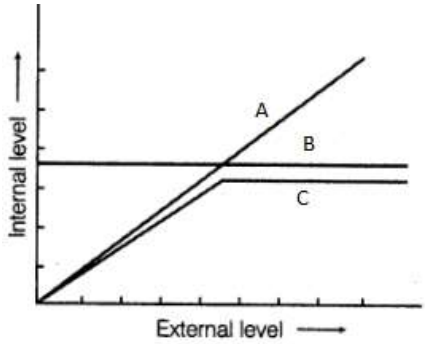
1. I and II only
2. I and III only
3. II and III only
4. I, II and III

56. The population with the following age pyramid:



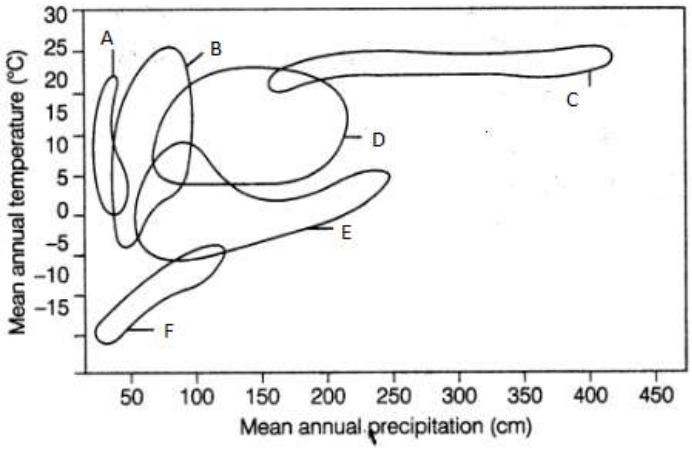
1. Will grow exponentially in near future
2. Will grow steadily in the future
3. Is likely to remain stable in future
4. Is likely to decline in future

57. In the following representation of organismic response to abiotic factors, the conformers are shown by the letter:



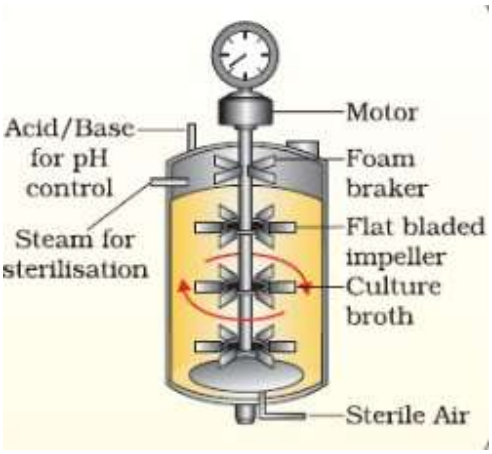
1. A
2. B
3. C
4. Both B and C

58. The following diagram shows the biome distribution with respect to annual temperature and precipitation. Grassland, Temperate forest and Coniferous forest are represented respectively by:



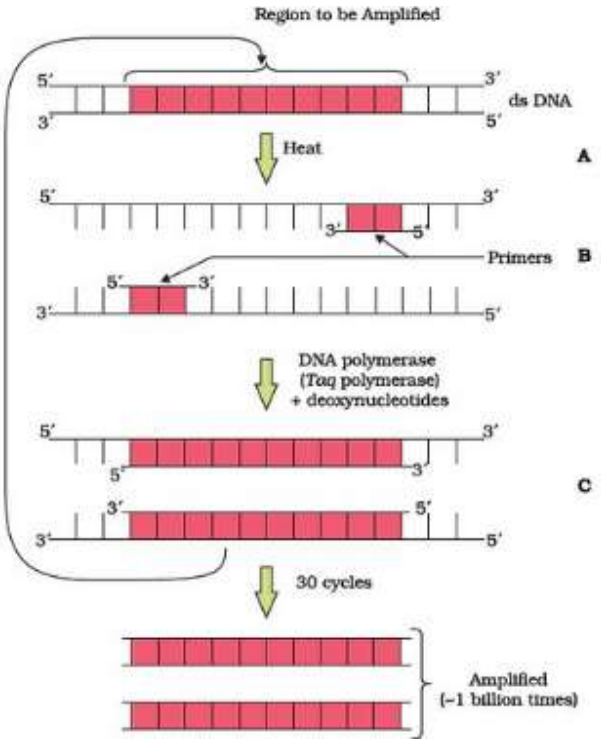
1. A, C and F
2. B, D and E
3. B, E and F
4. A, D and F

59. The bioreactor shown in the diagram is:



1. Sparged stirred tank type
2. Airlift type
3. Simple stirred tank type
4. Fluidized bed type

60. What is true about the steps of PCR shown in the diagram given below?



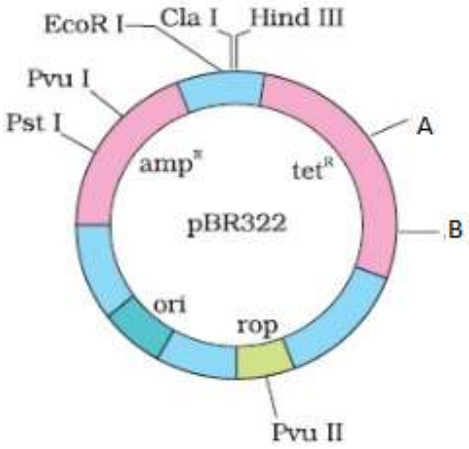
I. Step A occurs at the temperature of 95 – 98^0 C

II. Step B occurs at the temperature of 55^0 C

III. Step C occurs at the temperature of 72^0 C

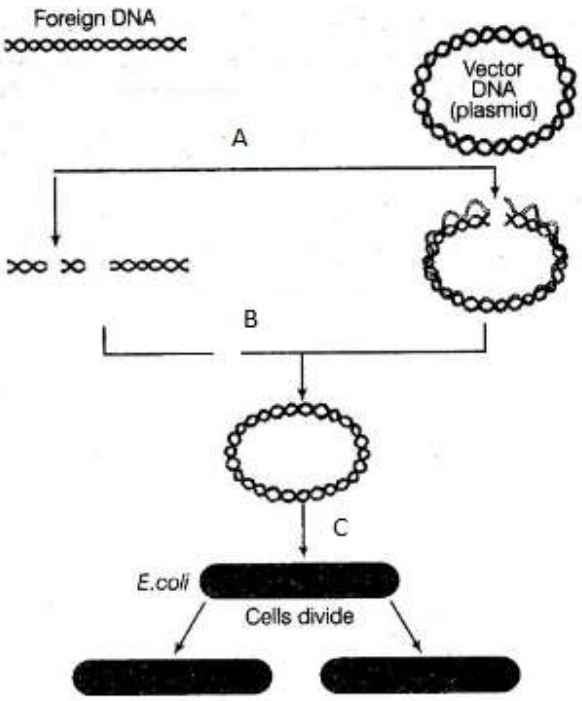
1. I and II only
2. I and III only
3. II and III only
4. I, II and III

61. A and B in the pBR 322, shown in the diagram given below, respectively represent recognition sequences of:



1. BamH I and Sma I
2. Hind II and Sma I
3. BamH I and Sal I
4. Sal I and Hind II

62. What is true regarding A, B and C in the given diagrammatic representation of rDNA technology?



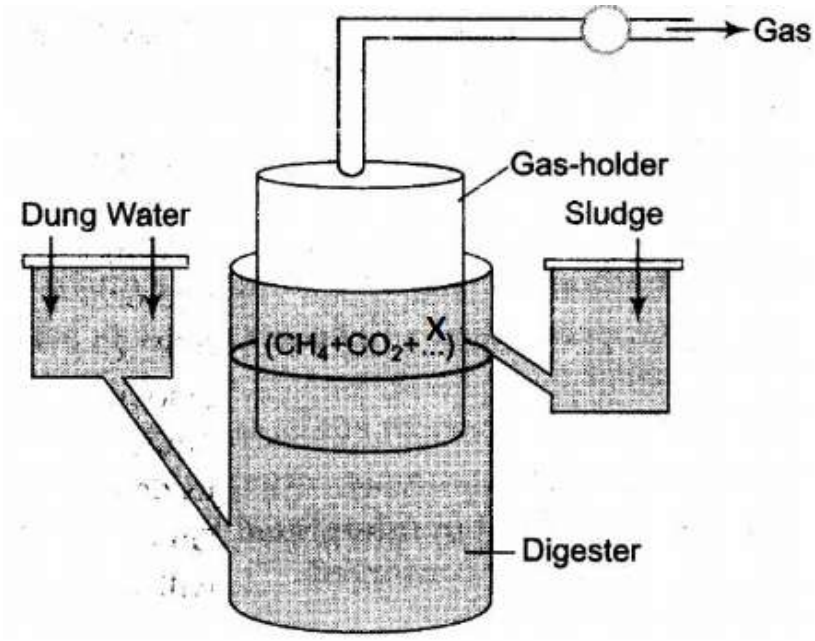
I. At A same restriction enzyme is used to cut both foreign and vector DNA

II. The enzyme used at B is DNA ligase

III. Step C can be called as transformation

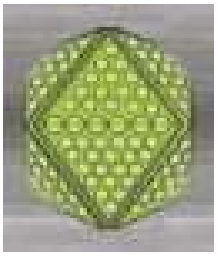
1. I and II only
2. I and III only
3. II and III only
4. I, II and III

63. In the given diagram the gas X can be:



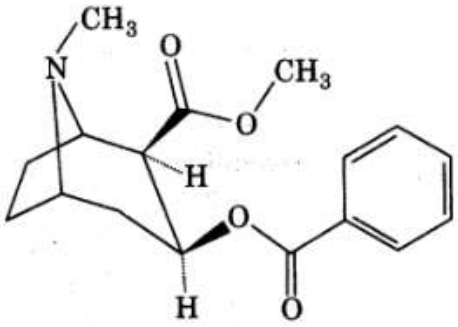
1. Hydrogen sulfide
2. Carbon monoxide
3. Ammonia
4. Oxygen

64. The virus shown here is a causative agent of:



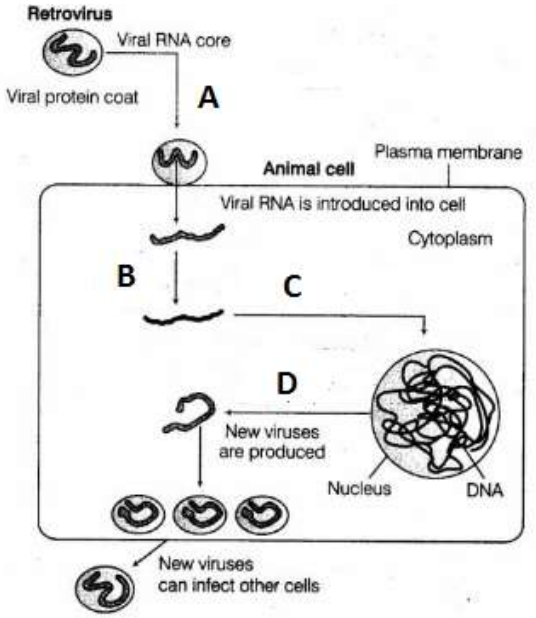
1. Intestinal infections
2. Respiratory infections
3. CNS infections
4. Genito-urinary infections

65. The receptors for the drug shown below are located in:



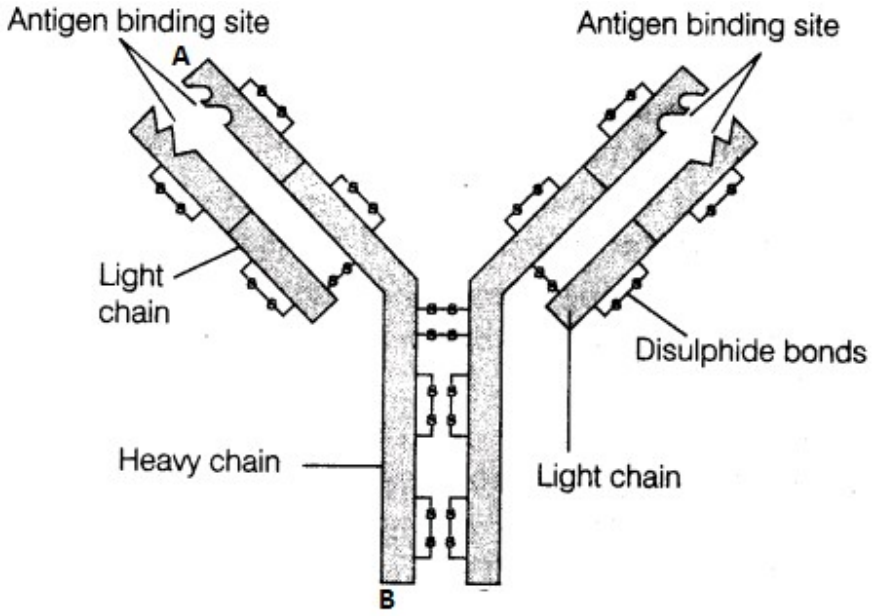
1. CNS and CVS
2. CVS and GIT
3. CNS and GIT
4. CNS and PNS

66. Study the diagram given and choose the correct statement:



1. A: retrovirus replicates outside the cell
2. B: viral DNA is produced by the host Reverse transcriptase
3. C: viral DNA incorporates into the host genome
4. D: New viral DNA is produced by the infected cell

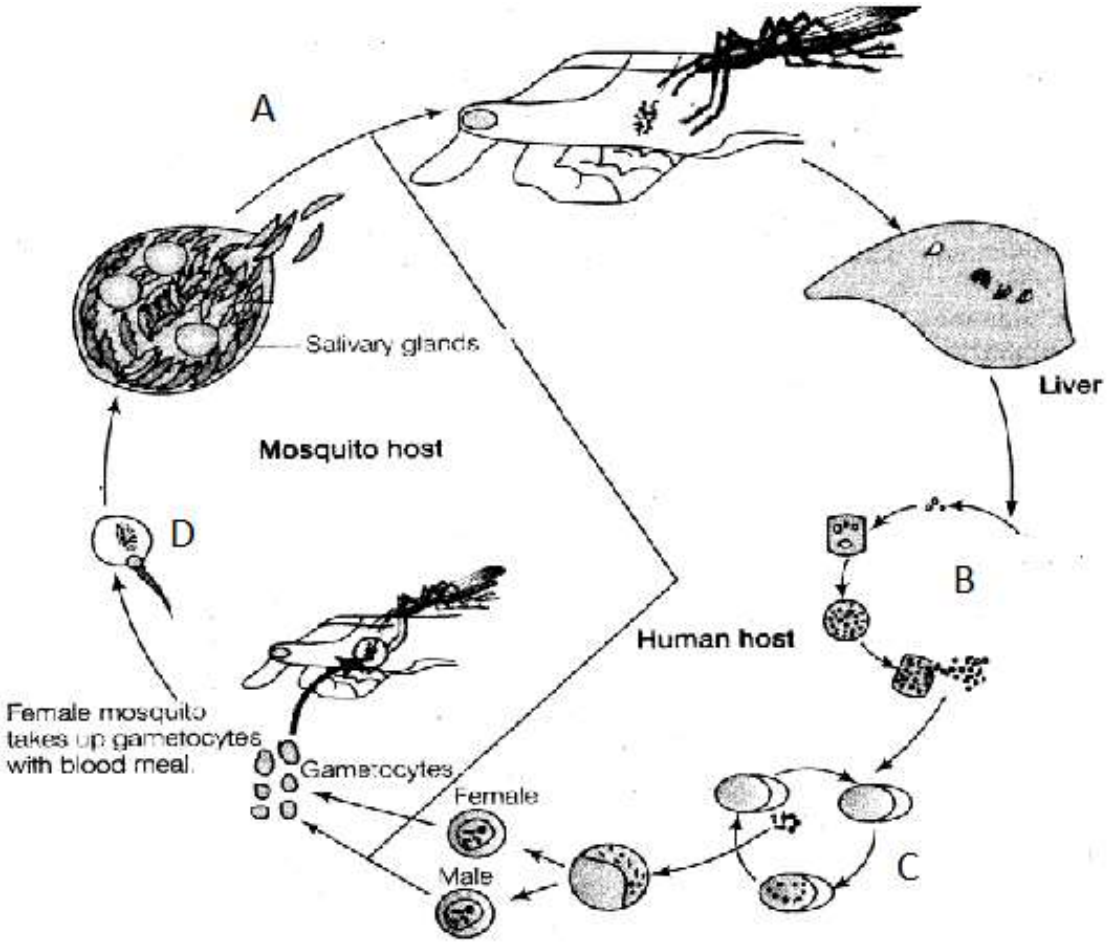
67. In the given diagram, A and B respectively represent:



Structure of an antibody molecule

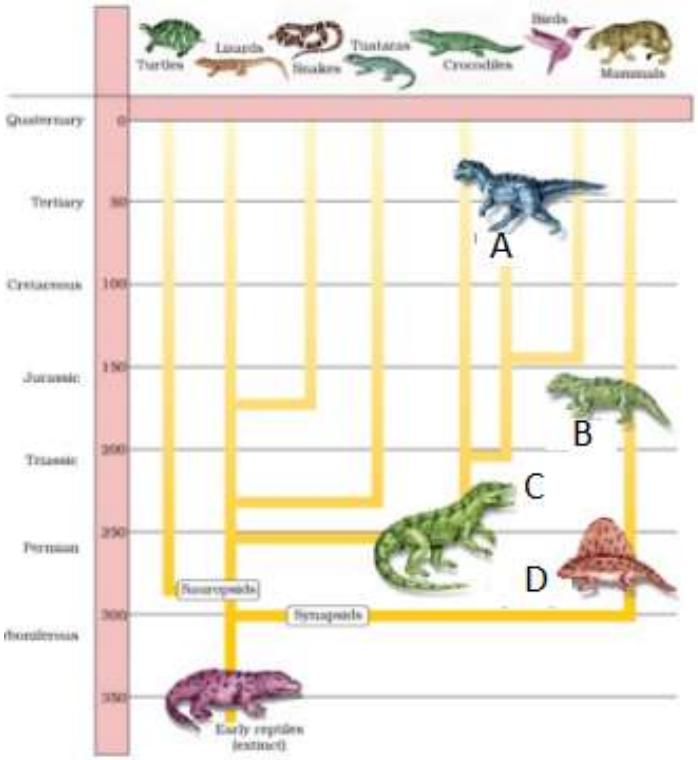
1. The N and the C terminus of the polypeptide
2. The C and the N terminus of the polypeptide
3. The constant and variable regions of the antibody molecule
4. The variable and constant regions of the antibody molecule

68. Consider the given stages in the life cycle of *Plasmodium* and choose the correctly matched pair:



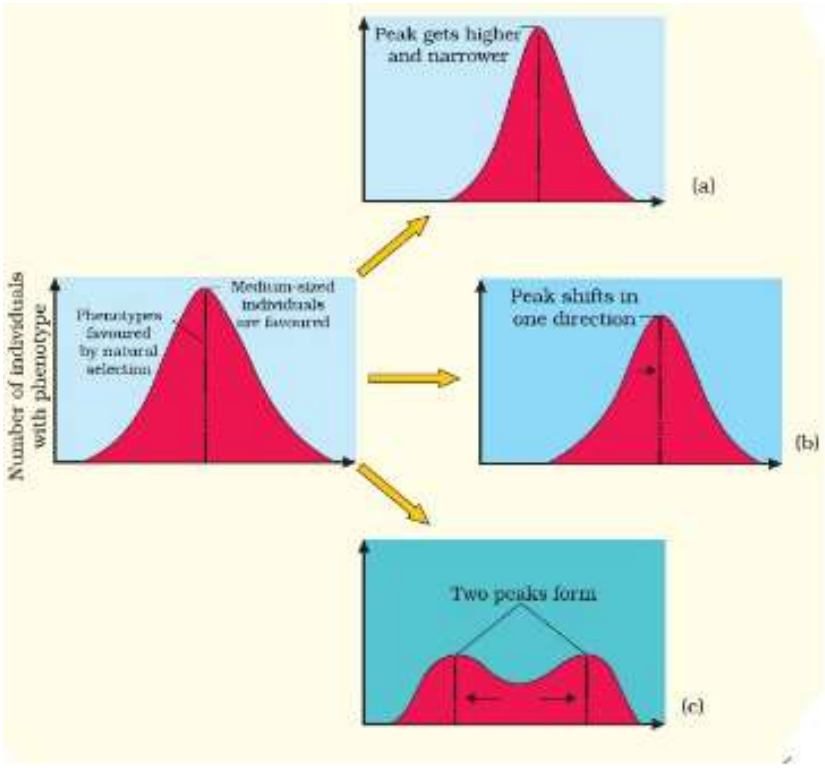
1.	A	Merozites infect human when mosquito bites
2.	B	Parasite reproduces sexually in liver cells
3.	C	Symptoms of malaria
4.	D	Fertilization in hemocoel of the mosquito

69. Given below is the representative evolutionary history of vertebrates through geological periods. A, B, C and D respectively are:



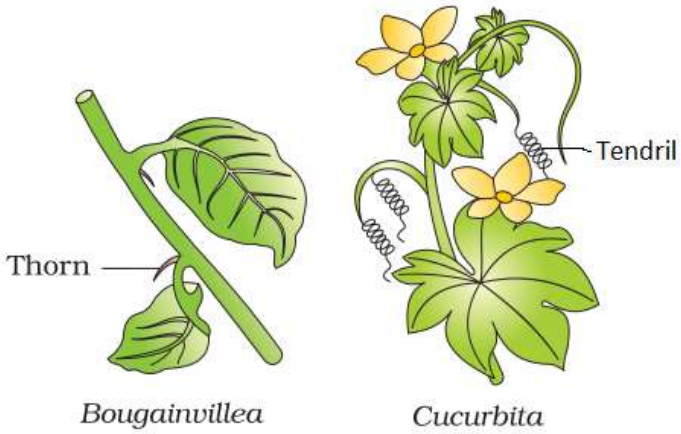
1. Dinosaurs, Thecodonts, Therapsids and Pelycousurs
2. Dinosaurs, Therapsids, Thecodonts and Pelycosaurs
3. Pelycosaurs, Therapsids, Thecodonts and Dinosaurs
4. Theraosids, Dinosaurs, Pelycosaurs and Thecodonts

70. Karn & Penroseshowed that birth weight follows a normal distribution, that mortality for newborns is greater for those either under- or over-weight, and that the mean birth weight (7 lbs) coincides with that showing minimum mortality. The type of natural selection operating here is shown by the graph:



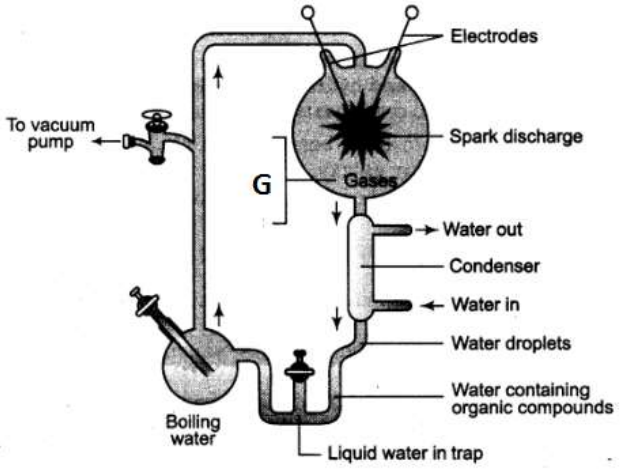
1. (a)
2. (b)
3. (c)
4. Both (a) and (b)

71. The following two plants exhibit:



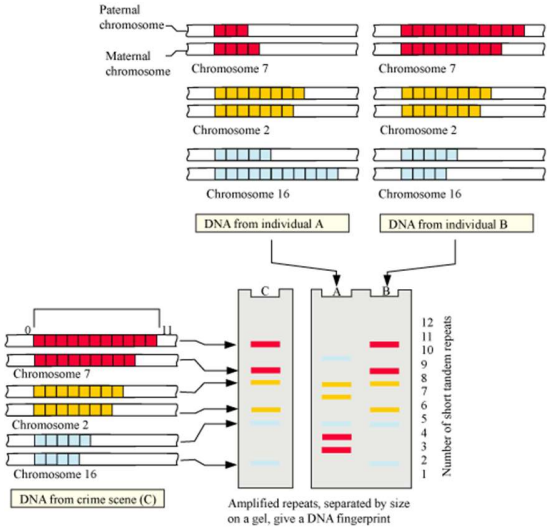
1. Analogous organs
2. Vestigial organs
3. Rudimentary organs
4. Homologous organs

72. In the apparatus of Urey and Miller experiment the gases [G] contained in the flask are:



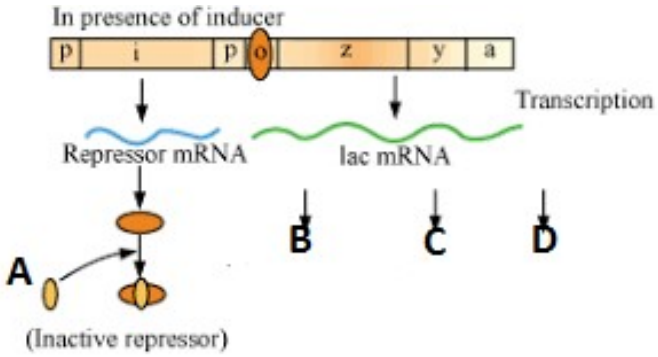
1. Methane, Carbon dioxide, Ammonia and Water vapour
2. Methane, Hydrogen cyanide, Ammonia and Water vapour
3. Methane, Hydrogen cyanide, Hydrogen and Water vapour
4. Carbon dioxide, Oxygen, Hydrogen and Ammonia

73. Which of the following cannot be inferred from the information given in the following diagram:



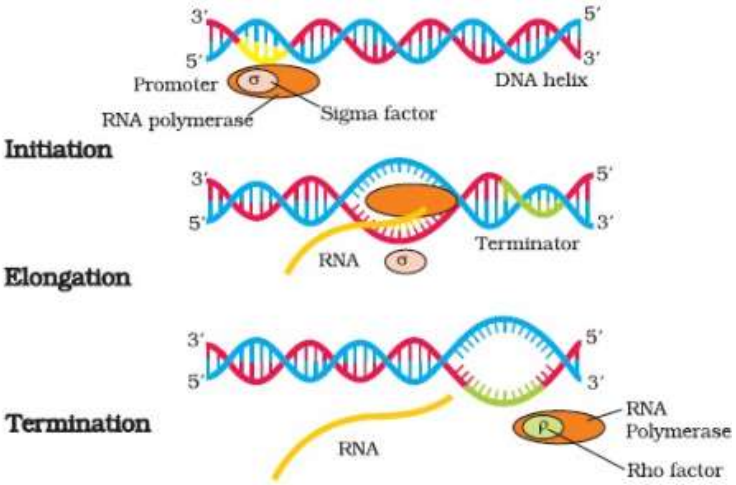
1. The DNA from the crime scene matches individual B
2. VNTRs are hypervariable
3. The larger fragments remain near the point on introduction in the gel electrophoresis
4. The smaller chromosomes in the human genome have smaller repeats of VNTR

74. Consider the following diagram showing the working of the *lac* operon in *E.coli* in the presence of inducer and choose the correct statement from the ones given below:



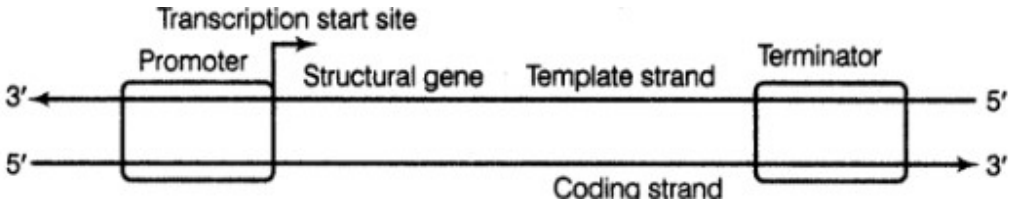
1. A is the inducer and can be either lactose or cAMP
2. B is the enzyme that will metabolize glucose, the preferred energy source
3. Some amount of C will be present in the cell even if lactose is absent
4. The absence of D will stop lactose from entering the cell

75. Study the diagram given below and choose the correct information that can be deduced:



1. The core RNA polymerase is capable of catalyzing elongation only
2. Sigma factor and Rho factor are needed for termination of transcription
3. DNA Helicase opens the strand of the DNA
4. Both strands of DNA are transcribed by the same RNA polymerase

76. Consider the transcription unit given in the following diagram and choose the correct statements:



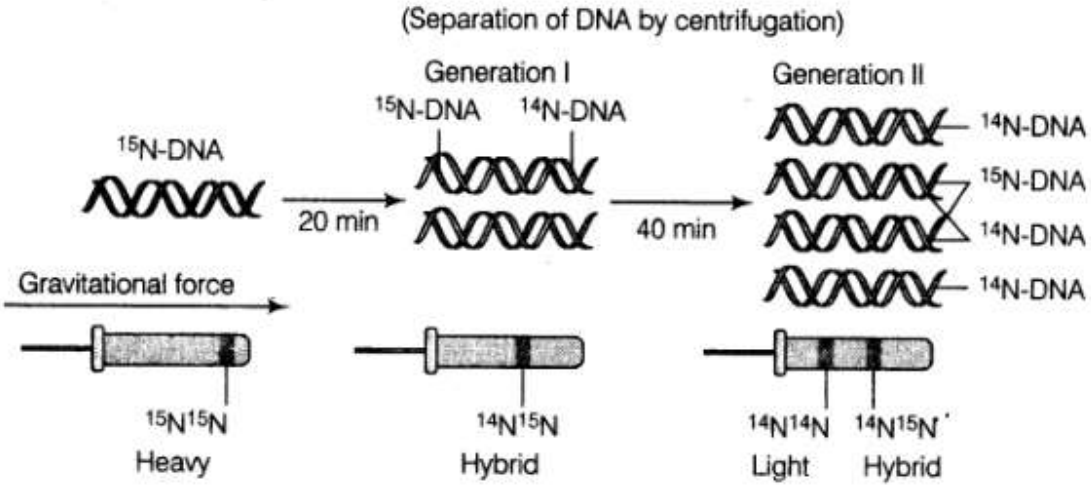
I. The promoter on the promoter is situated upstream and 5' to the structural gene.

II. It is the presence of the structural gene that defines the template strand.

III. The coding strand does not code for anything and is displaced during transcription

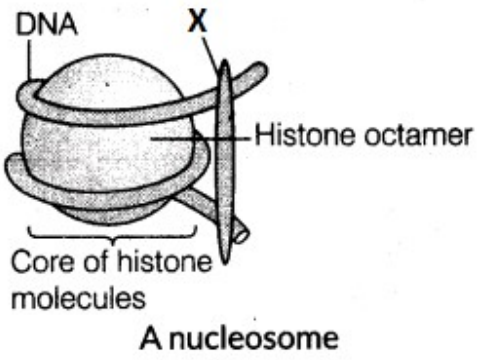
1. I and II only
2. I and III only
3. II and III only
4. I, II, III and IV

77. Study the results of the Meselson and Stahl experiment. What theoretically possible mode of DNA replication can be excluded after one round of replication?



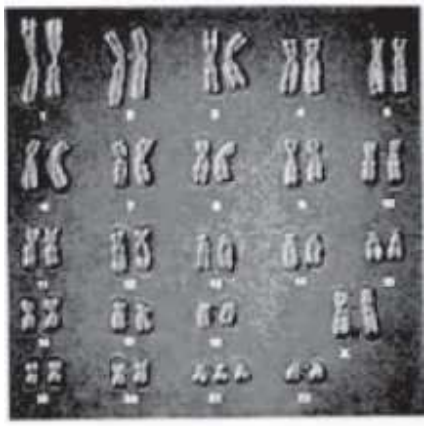
1. Conservative
2. Semiconservative
3. Disruptive
4. Both 1 and 3

78. Which histone is represented by the letter X in the given diagram?



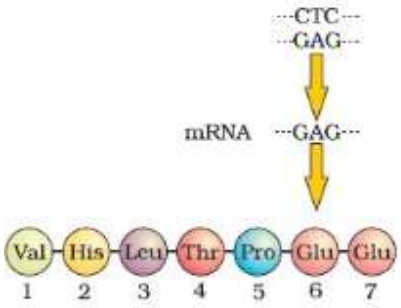
1. H 1
2. H 2 A
3. H 2 B
4. H 3

79. Which of the following would not be a feature seen in a patient with the following karyotype?



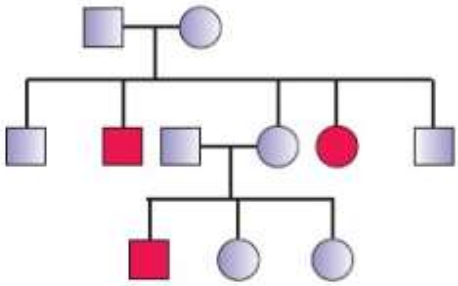
1. Many loops on finger tips
2. Congenital heart disease
3. Big and wrinkled tongue
4. Mucus clogging of airways

80. Given below is the initial amino acids of the beta chain of a hemoglobin molecule. What will be true about this hemoglobin molecule?



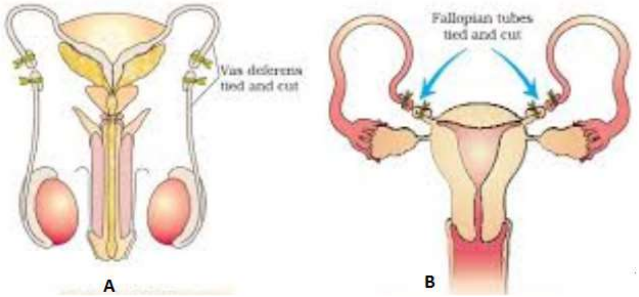
1. The RBCs carrying this molecule will undergo sickling at high oxygen tension
2. The RBCs carrying this molecule will undergo sickling at low oxygen tension
3. There will be a quantitative decrease in the synthesis of this molecule
4. This is normal beta chain of the hemoglobin molecule

81. The disease inheritance pattern exemplified in the given pedigree analysis can be:



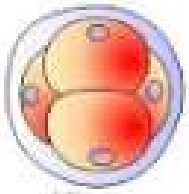
1. Hemophilia
2. Red green color blindness
3. Phenylketonuria
4. Polydactyly

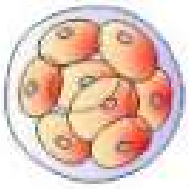
82. Consider the two surgical procedures given below and choose the correct statement:



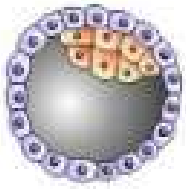
1. A is a more difficult procedure than B
2. The reversibility of A is good but that of B is very poor
3. A will make the male impotent and B will make the female infertile
4. Both A and B can be called as sterilization procedures

83. What structure gets implanted on the wall on the uterus during embryonic development?

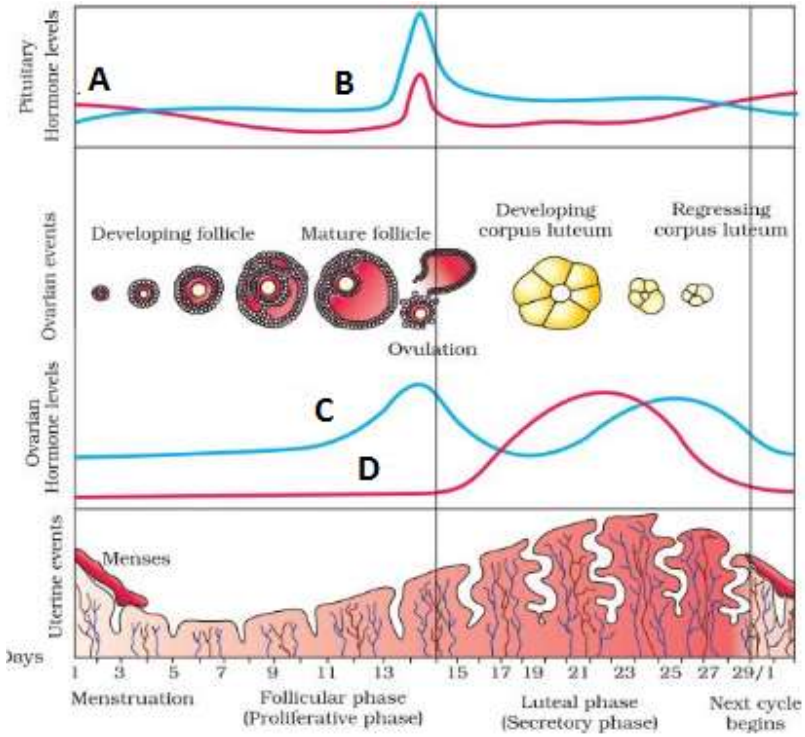
1. 

2. 

3. 

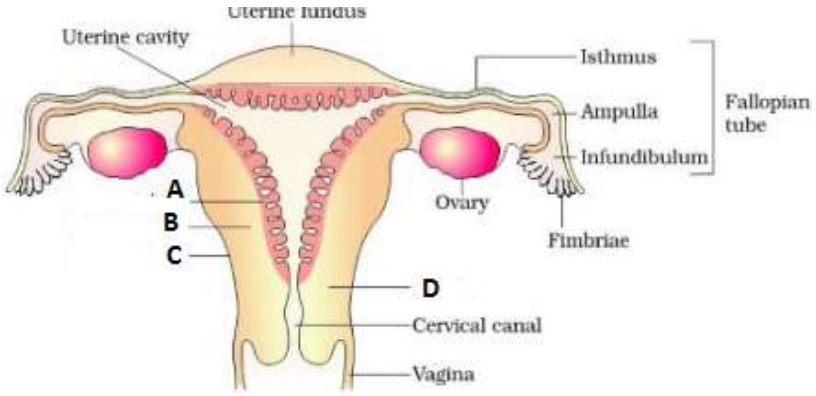
4. 

84. In the given diagram, identify A, B, C and D respectively:



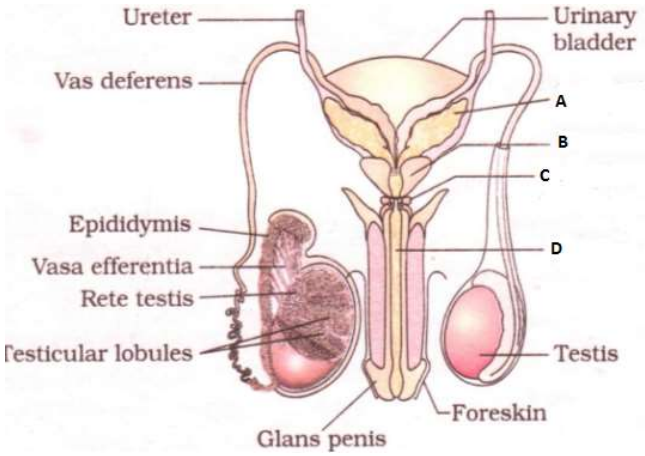
1. LH, FSH, Progesterone and Estrogen
2. FSH, LH, Estrogen and Progesterone
3. Estrogen, Progesterone, LH and FSH
4. Progesterone, Estrogen, FSH and LH

85. In the given diagram the part of the female reproductive system that undergoes cyclical changes with changes in the secretion of gonadotropins and gonadal steroids during the menstrual cycle is represented by:



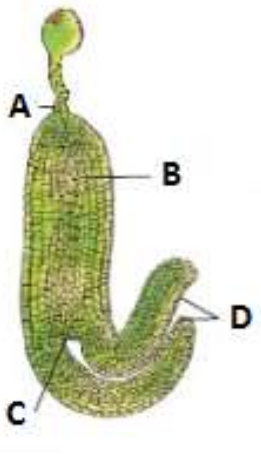
1. A
2. B
3. C
4. D

86. Which of the structures shown in the following diagram contributes the source of nutrition for the sperms ejaculated in the semen?



1. A
2. B
3. C
4. D

87. What functions as the embryonic root of the plant?

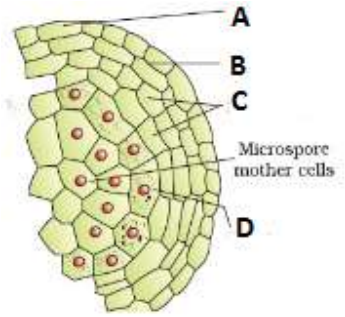


1. A
2. B
3. C
4. D

88. The following diagram shows:

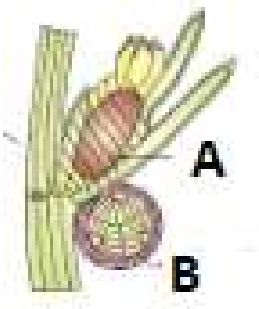
1. Multicarpellary, syncarpus pistil of *Papaver*
2. Multicarpellary, apocarpus pistil of *Papaver*
3. Multicarpellary, apocarpus gynoecium of *Michelia*
4. Multicarpellary, syncarpus gynoecium of *Michelia*

89. Which layer of the anther wall helps in its dehiscence?



1. A
2. B
3. C
4. D

90. What is true about the given figure?



1. The plant concerned is Chara and A is Oogonium and B is Antheridium
2. The plant concerned is Chara and B is Oogonium and A is Antheridium
3. The plant concerned is Marchantia and A is Oogonium and B is Antheridium
4. The plant concerned is Marchantia and B is Oogonium and A is Antheridium

NEETprep
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Solutions to Diagram Based Practise Questions
Botany & Zoology
NEET 2018

1.

Answer: 3

Read page 338/339, Figure 22.5, XI NCERT

As the hormone crosses the cell membrane, it must be lipid soluble and hence can be any of the steroid hormones. Steroid hormones are derivatives of cholesterol.

2.

Answer: 4

Read page 326, Figure 21.6, XI NCERT

D is organ of Corti and it has hair cells – the auditory receptors.

3.

Answer: 1

See page 320/321, Figure 21.4, XI NCERT

4.

See figure 20.10, Page 311, XI NCERT

B is patella. It is a sesamoid bone that develops within the tendon the rectus femoris muscle.

5.

See Figure 20.3, Page 306, XI NCERT

Answer: 1

The molecule show is myosin and its head has ATPase activity.

6. Answer: 4

See figure 19.6, Page 296, XI NCERT

7. Answer: 4

Read page 286, Figure 18.3, XI NCERT

8. Answer: 2

Read page 283/284, Figure 18.2, XI NCERT

B is AV node and there is a conduction delay here.

9. Answer: 2

See figure 17.5, Page 274, XI NCERT

This is about 40 mm Hg when about 75% Hb is still saturated

10. Answer: 4

See figure 16.6, read page 261, XI NCERT

It guards the opening of the hepato-pancreatic duct into the duodenum.

11. Answer: 2

See Figure 16.4, XI NCERT

The myenteric plexus [Auerbach's plexus] is present in the muscularis part shown by the letter B

12. Answer: 3

See figure 16.5, Read page 260, XI NCERT

A is central lacteal and B is crypt of Lieberkuhn

13.

Answer: 1

See Figure 16.3, XI NCERT

14.

Answer: 2

See Figure 15.12, Page 251, XI NCERT

15.

Answer: 1

See figure 15.4, Page 242, XI NCERT

16.

Answer: 1

See Figure 14.5, Read page 234, XI NCERT

For each ATP produced, $2H^+$ passes through F_0 from the inter-membrane space to the matrix.

17.

Answer: 3

See Figure 13.3, Page 210 XI NCERT

18.

Answer: 1

See Figure 13.9, Page 219 XI NCERT

19.

Answer: 3

See page 204, XI NCERT

20.

Answer: 4

See Figure 12.1, Page 195 XI NCERT

21.

Answer: 3

See Figure 11.7, Page 185, XI NCERT

22.

Answer: 2

See Figure 10.2, Page 165, XI NCERT

23.

Answer: 2

See Figure 9.7, page 157 XI NCERT

Competitive inhibition is a form of enzyme inhibition where binding of an inhibitor prevents binding of the target molecule of the enzyme, also known as the substrate. This is accomplished by blocking the binding site of the substrate - the active site - by some means. The Vmax indicates the maximum velocity of the reaction, while the Km is the amount of substrate needed to reach half of the Vmax. Km also plays a part in indicating the tendency of the substrate to bind the enzyme. Competitive inhibition can be overcome by adding more substrate to the reaction; therefore, increasing the chances of the enzyme and substrate binding. As a result, this alters only the Km, leaving the Vmax the same.

24.

Answer: 2

See Figure 9.3 page 150, XI NCERT

2 is a sulfur containing amino acid with – SH group and therefore is cysteine and not methionine.

25.

Answer: 1

See Figure 9.1 page 145, XI NCERT

The compound is adenosine. The sugar is ribose.

26. Answer: 2

Read page 144, XI NCERT

In chemistry, a zwitterion, meaning 'hermaphrodite'), formerly called a dipolar ion, is a molecule with two or more functional groups, of which at least one has a positive and one has a negative electrical charge and the net charge of the entire molecule is zero. Because they contain at least one positive and one negative charge, zwitterions are also sometimes called inner salts. The charges on the different functional groups balance each other out, and the molecule as a whole is electrically neutral. The pH where this happens is known as the isoelectric point.

27. Answer: 1

See Figure 8.12, Page 139 XI NCERT

28. Answer: 4

See Figure 8.9, Page 137, XI NCERT

It is the structure of cilia or flagella.

29. Answer: 4

Read page 136, see Figure 8.8, Page 136 XI NCERT

D is stroma.

30. Answer: 3

See Figure 8.5, read page 133 XI NCERT

A is RER and B is SER

31.

Answer: 2

See figure 7.18, read page 114/115 XI NCERT

B is seminal vesicle

32.

Answer: 3

See figure 7.4, Page 103 XI NCERT

C is macrophage

33.

Answer: 3

See figure 7.1, read page 101 XI NCERT

The epithelium shown is Columnar ciliated epithelium

34.

Answer: 1

See figure 6.7, Page 92 XI NCERT

35.

Answer: 2

See figure 6.5 page 90, read page 93 XI NCERT

Conjoint open vascular bundles with endarch protoxylem are most likely found in dicot stem.

36.

Answer: 3

See figure 6.2 page 86 XI NCERT

The tissue is collenchyma

37.

Answer: 1

The floral diagram is of family Liliaceae. The plant can be *Colchicum autumnale*, source of colchicines.

38.

Answer: 4

See Figure 5.16, Page 75 XI NCERT

The placentation is free central.

39.

Answer: 1

See figure 5.15 page 74 XI NCERT

The aestivation seen in *Calotropis* is valvate.

40.

Answer: 4

See figure 5.13, Page 73 XI NCERT

The term perigynous would be used for flower; the ovary is said to be half-inferior.

41.

Answer: 2

See figure 5.3 page 67 XI NCERT

B is region of elongation

42.

Answer: 2

See figure 4.16, Page 55 XI NCERT

2 is notochord.

43.

Answer: 3

See figure 4.7, Page 50 XI NCERT

The cell is cnodiblast.

44.

Answer: 4

See figure 4.3, Page 48, XI NCERT

The organism is acoelmate [platyhelminthes] and is un likely to have a complete digestive tract.

45.

Answer: 4

See figure 3.7, Page 42, XI NCERT

The life cycle pattern shown is haplontic and *Ectocarpus* has haplo-diplontic life cycle.

46.

Answer: 3

See Figure 3.3, Page 37 XI NCERT

The plant shown is *Salvinia* and it is a heterosporous fern.

47.

Answer: 2

See figure 3.2, page 34 XI NCERT

48.

Answer: 3

See Figure 2.6, Page 26 XI NCERT

49.

Answer: 1

See Figure 16.7, Page 281, XII NCERT

50.

Answer: 2

See Figure 16.3, Page 274, XII NCERT

51.

Answer: 1

See Figure 16.1, Read page 271, XII NCERT

52.

Answer: 3

See Figure 15.2, Page 262, XII NCERT

53.

Answer: 4

See Figure 15.1, Read page 260, XII NCERT

54.

Answer: 4

See Figure 14.4, Page 249, XII NCERT

55.

Answer: 1

See Figure 13.5, Page 230 XII NCERT

The carrying capacity is “K”.

56.

Answer: 3

See Figure 13.4, Page 227 XII NCERT

57.

Answer: 1

See Figure 13.3, Page 223 XII NCERT

58.

Answer: 2

See Figure 13.1, Page 220 XII NCERT

59.

Answer: 3

See Figure 11.7, Page 204, XII NCERT

60.

Answer: 4

See Figure 11.6, Page 202, XII NCERT

Step A is denaturation, Step B is annealing of primers. Step C is extension of primers done by Taq polymerase which has a temperature optimum of 72^0 C.

61.

Answer: 3

See Figure 11.4, page 199, XII NCERT

62.

Answer: 4

See Figure 11.2, Page 197, XII NCERT

63.

Answer: 1

See Figure 10.8, Page 186, XII NCERT

The diagram shows a typical biogas plant. Biogas may contain small amounts of hydrogen sulfide.

64.

Answer: 2

See Figure 10.3, Page 180, XII NCERT

The virus shown is Adenovirus.

65.

Answer: 3

See figure 8.7, Page 158, XII NCERT

The molecule shown is morphine.

66.

Answer: 3

See Figure 5.6, Page 155, XII NCERT

67.

Answer: 1

See Figure 5.4, Page 151, XII NCERT

68.

Answer: 3

See Figure 8.1, Page 148, XII NCERT

69.

Answer: 2

See Figure 7.10, Page 139, XII NCERT

70.

Answer: 1

See Figure 7.8, Page 136, XII NCERT

This is stabilizing selection.

71.

Answer: 4

See Figure 7.3, Page 131 XII NCERT

Thorn of *Bougainvillea* and Tendrils of *Curcurbita* are homologous

72.

Answer: 3

See Figure 7.1, Page 128, XII NCERT

73.

Answer: 4

See Figure 6.16, Page 123 XII NCERT

74.

Answer: 3

See figure 6.14, Page 117 XII NCERT

The inducer is lactose or allolactose. B is beta galactosidase and metabolizes lactose. Yes some permease will be present otherwise permease will not be able to enter the cell. Transacetylase is D and its function is not exactly known.

75.

Answer: 1

See Figure 6.10, Page 109 XII NCERT

As can be seen the RNA polymerase is not associated with sigma and rho factors during elongation.

76.

Answer: 2

See Figure 6.9, Read page 108 XII NCERT

77.

Answer: 1

See Figure 6.7, Page 105 XII NCERT

If the mode were conservative, two band [one 14/14 and another 15/15] would have been visible.

78.

Answer: 1

See Figure 6.4, Page 99 XII NCERT

79.

Answer: 4

See Figure 5.16, Page 90 XII NCERT

The karyotype give is of Down's Syndrome. Mucus clogging is seen in cystic fibrosis.

80.

Answer: 4

See Figure 5.15, Page 89 XII NCERT

81.

Answer: 3

See Figure 5.14, Page 88 XII NCERT

The pedigree shows an autosomal recessive trait inheritance.

82.

Answer: 4

See Figure 4.4, Page 61 XII NCERT

B is more difficult as the surgeon will have to enter the abdominal cavity. Reversibility of both are poor. Male will become sterile and not impotent.

83.

Answer: 4

See Figure 3.11, Page 52/53 XII NCERT

4 is the blastocyst and it gets implanted on the uterine endometrium.

84.

Answer: 2

See Figure 3.9, Page 50 XII NCERT

85.

Answer: 1

See Figure 3.3, Page 45 XII NCERT

86.

Answer: 1

See Figure 3.1, Page 43 XII NCERT

A is seminal vesicle and contributes fructose to the semen.

87.

Answer: 2

See Figure 2.13, Page 34 XII NCERT

B is the radicle.

88.

Answer: 3

See Figure 2.7, Page 25, XII NCERT

89.

Answer: 2

See Figure 2.3, Page 22 XII NCERT

Expansion of the endothecial layer and subsequent drying are required for dehiscence. The endothecium tissue is responsible for the tensions that lead to splitting of the anther. This tissue is usually one to several layers thick, with cells walls of uneven thickness due to uneven lignification. The cells lose water, and the uneven thickness causes the thinner walls of the cells to stretch to a greater extent. This

creates a tension that eventually leads to the anther being split along its line of weakness and releasing pollen grains to the atmosphere.

90.

Answer: 1

See Figure 1.6, Page 12 XII NCERT