

**QUESTION PAPER-2**  
**OCTOBER 2012**

STD. 12  
SEMESTER-III  
BIOLOGY

Time: 2:30 hours]

[Total marks: 100

Instructions : Same as Question Paper-1

**SECTION-A**

- ❖ Question 1 to 100 are multiple choice type questions. Choose correct option
- Which of the given option is correct for the given points, in reference to C<sub>4</sub> path ? Points
    - Processes by which first product of C<sub>4</sub> path is produced
    - Where does calvin cycle occur
    - Where and by which process pyruvic acid is formed

(A) (i) Decarboxylation (ii) Mesophyll cells  
(iii) Bundle sheath cells and carboxylation

(B) (i) Carboxylation (ii) Bundle sheath cells  
(iii) Bundle sheath cells and decarboxylation

(C) (i) Carboxylation (ii) Mesophyll cells (iii) Mesophyll cells and carboxylation

(D) (i) Carboxylation (ii) In C<sub>4</sub> path calvin cycle does not occur  
(iii) Mesophyll cells and carboxylation
  - For alcoholic and lactic acid fermentation, which of the given option is not correct?
    - Both shows anaerobic respiration
    - They use NADH<sub>2</sub>, which is produced during glycolysis
    - Both involve decarboxylation of pyruvic acid
    - Alcohol fermentation occurs in yeast lactic acid fermentation occurs in muscle
  - Which option is correct for statement X and Y. Statement  
X : When PS-II and NADP take part in process, photolysis of water is essential  
Y : As NADP accepts electrons of PS-I and PS-II lose its electron for PS-II
    - X is correct and Y is wrong
    - X and Y both are correct and Y is correct reason for X
    - X and Y both are correct and Y is not correct explanation of X
    - Y is correct and X is wrong
  - Which of the following statement is correct for the regulation of respiration by nervous system ?
    - Medulla oblongata → respiratory centres → Vagus Nerve (10<sup>th</sup> nerve) → thoracic diaphragm and intercostal muscles

- (B) Medulla oblongata → respiratory centres → 9<sup>th</sup> cranial nerve → thoracic diaphragm and intercostal muscle
- (C) Vagus nerve (10<sup>th</sup> cranial nerve) medulla oblongata → spinal cord spinal nerve → thoracic diaphragm and inter costal muscle
- (D) None of the given

5. What does Q, R, S wave indicate ?

- (A) Systole of auricle (B) Systole of ventricle
- (C) Simultaneous diastole of auricles and ventricle
- (D) Diastole of ventricle

6. From which of the following duct of bellini receives urine ?

- (A) From column of bertini (B) From Renal pelvis
- (C) From collecting duct (D) None of the given

7. How many bones are found in an adult human ?

- (A) 207 (B) 218 (C) 206 (D) 200

8. In population growth, after sometime growth is rapid and population increases stepwise then what is this phase of growth called ?

- (A) Logarithmic phase (B) Equilibrium,
- (C) Negative acceleration phase (D) Positive acceleration phase

9. Which option is correct for the statement X and Y ?

**Statement X : Cancer never attack heart**

**Statement Y : As heart cell does not get enough amount of oxygen**

- (A) X and Y both are correct (B) X and Y both are wrong
- (C) X is correct and Y is wrong (D) X is wrong; Y is correct

10. Which option is correct for the given statement X, Y and Z ?

**X : Columbia has 1400 species of birds, New York has 105 species of birds, whereas, greenland has 56 species of birds.**

**Y : There is increase in biodiversity as the moves from polar region to equator region.**

**Z : More solar energy is available in tropics.**

- (A) X and Z are correct Y is wrong
- (B) X, Y and Z are correct and Y and Z gives correct explanation for X
- (C) X is correct Y and Z are wrong
- (D) X, Y and Z are correct and Y and Z do not gives correct explanation for X.

11. What is biological magnification of D.D.T in large size fish eating birds ?

- (A) 0.25 PPM (B) 2.5 PPM (C) 25 PPB (D) 25 PPM

12. They are examples of inert waste.

- (A) Paper (B) Demolition waste

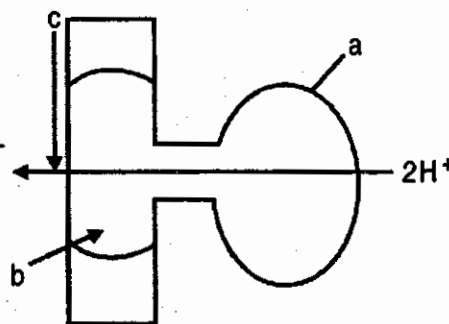
13. Which option shows correctly matched pairs for column - I (Regulating Source) and column - II (Related events)

Column - I	Column - II
(i) Sympathetic nervous system	(a) Initiate heart-beat
(ii) Myogenic tissue	(b) Normalize cardiac activity
(iii) Parasympathetic nervous system	(c) Increase cardiac activity
(iv) S.A. node	(d) Possess properties of both muscle and nerve
(v) A.V. node	(e) Send stimulation to bundle of HIS and purkinje fibre

- (A) (i - b) (ii - c) (iii - d) (iv - e) (v - a) (B) (i - d) (ii - a) (iii - b) (iv - c) (v - e)  
 (C) (i - c) (ii - d) (iii - b) (iv - a) (v - e) (D) (i - c) (ii - d) (iii - a) (iv - e) (v - b)
14. They convert  $\text{NO}_3$  into  $\text{N}_2$ .
- (A) Nitrococcus and Nitrobacter (B) Agrobacterium and Pseudomonas  
 (C) Nitrosomonas and Nitrobacter (D) Pseudomonas and Nitrobacter
15. It is an original source of molecule, which is added to substrate for reduction in calvin cycle ?

- (A)  $\text{NADPH}_2$  (B)  $\text{OH}^-$  (C)  $\text{H}_2\text{O}$  (D) All of the given
16. Which option is correct for the regions labelled as "a", "b" and "c" in the given diagram of ATP synthesis in mitochondria ?

- (A) a =  $\text{F}_1$  → Through this proton moves to  $\text{F}_0$   
 b =  $\text{F}_0$  → It has site for ATP synthesis  
 c = It shows correct direction of passage of  $2\text{H}^+$
- (B) a =  $\text{F}_0$  → It has site for hydrolysis of ATP  
 b =  $\text{F}_1$  → It is found in peripheral membrane  
 c = It provides passage for ATP molecule
- (C) a =  $\text{F}_1$  → It has site for ATP synthesis  
 b =  $\text{F}_0$  → Through it proton flows to  $\text{F}_1$   
 c = It shows wrong direction of movement of  $2\text{H}^+$



- (D) None of the given
17. Which option is correct for the name and source of secretion of the hormone, which stimulates gall bladder to release bile ?
- (A) Cholecystikin - Wall of stomach  
 (B) Secretin - Wall of duodenum  
 (C) GIP - Wall of duodenum  
 (D) Cholecystikin - Wall of duodenum
18. Which option is correct for the largest salivary gland of human ?
- (A) Sub-mandibular (B) Sub lingual

19. For location and for the source of  $\text{Cl}^-$  in  $\text{Cl}^-$  shift (a) and  $\text{Cl}^-$  back shift (b) which option is correct ?

- (A)  $\text{Cl}^-$  back shift      a = Respiratory surface, b = KCl in blood plasma  
 $\text{Cl}^-$  shift                      a = Tissue, b = NaCl in blood plasma
- (B)  $\text{Cl}^-$  back shift      a = Respiratory surface, b = KCl in RBC  
 $\text{Cl}^-$  shift                      a = Tissue, b = KCl in RBC
- (C)  $\text{Cl}^-$  back shift      a = Respiratory surface, b = NaCl in RBC  
 $\text{Cl}^-$  shift                      a = Tissue, b = KCl in blood plasma
- (D) None of the given

20. On injury of equal strength and type to crown and pulp, the pulp experience more pain as .....

- (A) Nerves are present in it  
 (B) Large amount of calcium phosphate is present in it  
 (C) It is highly vascularized                      (D) All of the given

21. During micturition smooth muscle of wall of urinary bladder ..... and urethral sphincter surrounding opening of bladder ....., respectively.

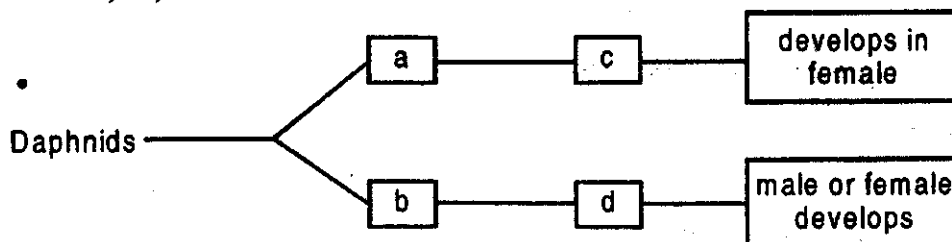
- (A) Relaxation, Contraction                      (B) Contraction, Contraction  
 (C) Contraction, Relaxation                      (D) Relaxation, Relaxation

22. Which option is correct for matched pairs for Column I and Column II ?

Column - I	Column - II
(a) Relaxation of muscle	(i) High proportion of sarcoplasmic reticulum
(b) Aerobic tissue	(ii) Flight muscle of birds
(c) White muscle	(iii) Absence of ATP
(d) Cross-bridge formation	(iv) Sarcosome
(e) Skeletal muscle	(v) Masking of actin by $\text{Ca}^{+2}$

- (A) (a - iii), (b - ii), (c - i), (d - v), (e - iv)  
 (B) (a - v), (b-ii), (c-i), (d - iii), (e - iv)  
 (C) (a - i), (b - iii), (c - ii), (d - v), (e - iv)  
 (D) (a - iv), (b - ii), (c - i), (d - iii), (e - v)

23. Given chart shows relation between water temperature of habitat, types of egg and development of sex in daphnids. In the given chart "a" and "b" are related to temperature, "c" and "d" shows types of egg, then which option is correct for a, b, c and d ?



- (A) a = Increase in temperature                      (B) a = Low temperature

c = Sexual egg

d = Sexual egg

- (C) a = Normal  
b = Increase in temperature  
c = Parthenogenetic egg  
d = Sexual egg

c = Sexual egg

d = Parthenogenetic egg

- (D) a = Increase in temperature  
b = Normal  
c = Parthenogenetic egg  
d = Sexual egg

24. They are known as detritivores.

- (A) All heterotrophic components (B) Microconsumers  
(C) Macroconsumers (D) All of the given

25. What is correct for Javan, Bali and Caspian ?

- (A) They are protected sub-species of tiger  
(B) They are extinct genus of tiger  
(C) They are extinct sub-species of sea-cow  
(D) They are extinct sub-species of tiger

26. What is M-band ?

- (A)  $\text{Ca}^+$  storing structure in muscle (B) Central region in actin filament  
(C) Structure, which is connecting actin and myosin  
(D) Central region in myosin filament

27. Which option is correct for the events and its chronology during transport of food from leaf upto the conducting unit ?

- (A) Leaf  $\rightarrow$  Starch  $\rightarrow$  Sucrose (Non-reducing and chemically stable)  $\rightarrow$  Companion cell  $\rightarrow$  By passive transport to sieve tube cell  
(B) Leaf  $\rightarrow$  Starch  $\rightarrow$  Sucrose (Non-reducing and chemically stable)  $\rightarrow$  Companion cell  $\rightarrow$  To sieve tube cell through active transport  
(C) Leaf  $\rightarrow$  Starch  $\rightarrow$  Sucrose (Reducing and chemically unstable)  $\rightarrow$  Companion cell  $\rightarrow$  Passive transport to sieve tube cell  
(D) Leaf  $\rightarrow$  Starch  $\rightarrow$  Sucrose (Non-reducing and chemically stable)  $\rightarrow$  Sieve tube cell Actively transported to Companion cell

28. It is required for the maintenance of ribosomal constitution.

- (A)  $\text{S}^-$  (B)  $\text{Fe}^{+2}$  (C)  $\text{Mg}^{2+}$  (D)  $\text{Cu}^{+2}$

29. In which colour light, the rate of photosynthesis is maximum?.

- (A) Red (B) Yellow (C) Blue (D) Green

30. Which option is correct for the given statements X and Y ?

Statement "X" : -For, Fat, (Tripalmitin) value of RQ is less than one.

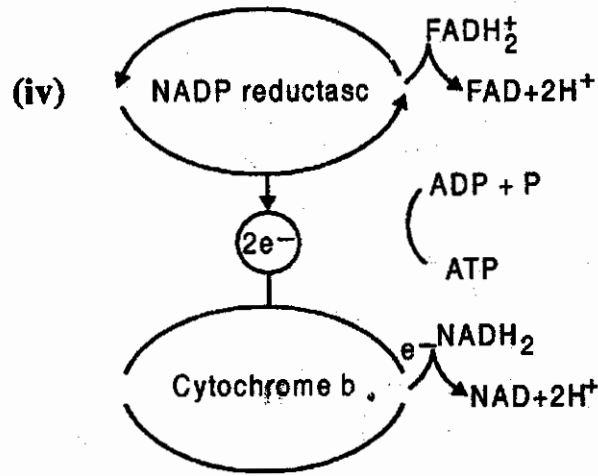
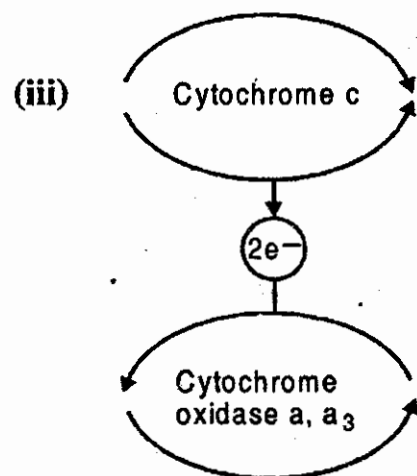
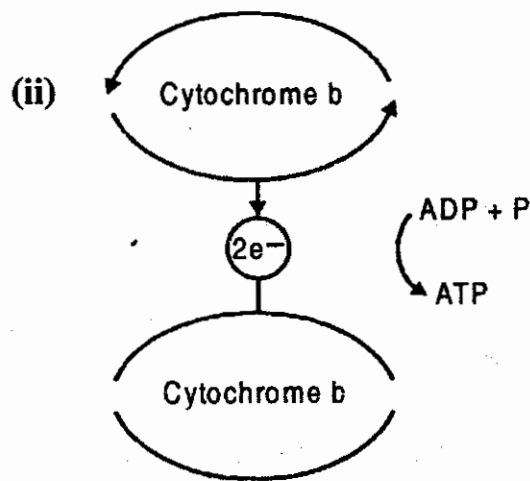
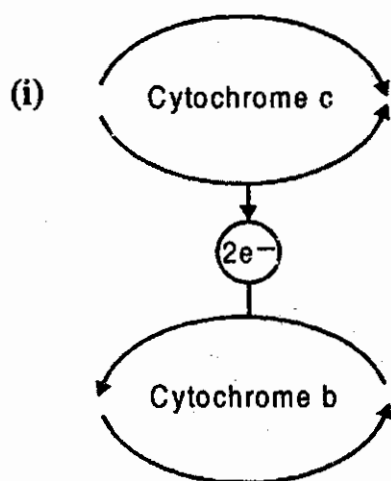
Statement "Y" : Less oxygen is present in its constitution and it need more  $\text{O}_2$  for its" respiration.

- (A) "X" and "Y" both are correct and "Y" does not give correct explanation of "X"

(C) "X" is correct and "Y" is wrong.

(D) "X" and "Y" both are wrong.

31. Which of the following diagram is correct for oxidative phosphorylation.



(A) (i) and (iv) are correct

(B) (ii) and (iv) are correct

(C) (i), (ii) and (iii) are correct

(D) (ii) and (iii) are correct

32. Which option indicates correct chronology of the events of absorption of fatty acid ?

(A) Fatty acid → Lymph vessel → Micelle Chytomicrons → blood

(B) Fatty acid → Micelle → Chytomicrons → Lymph vessel → blood

(C) Fatty acid → blood → Chytomicrons Micelle → Lymph vessel

(D) Fatty acid → Chytomicrons → Micelle → Blood → Lymph vessel

33. In which disease alveolar sac remain filled with air even after expiration and it lose their elasticity ?

(A) Bronchitis

(B) Pneumonia

(C) Asthma

(D) Emphysema

34. How is lymph, which has crossed lymph node functionally beneficial to the lymph present in small lymph vessel ?

(A) It has more fibrinogen, so it clots quickly

(B) It has 99% R.E.Cs, so it is very important in respiration

(C) It has property of disease resistance

(D) It has lower amount of nutrient

35. Which of the following is paired facial bone ?

(A) Parietal (B) Zygomatic (C) Vomer (D) Occipital

36. What is correct for potential mortality ?

(A) Potential mortality is always higher than realised mortality

(B) Potential mortality is always lower than realised mortality

(C) Death in very young age is included in potential death

(D) All of the given

37. They are greatest reservoir of phosphate in the world.

(A) Insoluble ferrous and calcium phosphates present in rocks

(B) Water soluble phosphates

(C) Bisodium hydrogen phosphate (D) Sodium bi hydrogen phosphate

38. What is gene-pool ?

(A) Total number of genes in an individual cells, of any individual

(B) Total number of genes present in community

(C) Total number of genes in population

(D) The total number of genes present in every individual of ecosystem

39. Radioactive waste should be buried at minimum ..... depth below the earth

(A) 500 feet (B) 500 meter (C) 50 feet (D) 5000 meter

40. Some statements regarding water potential are given here. Which of the given option indicates all correct statements ?

(i) When water enter the cell, value of  $\Psi_p$  decreases

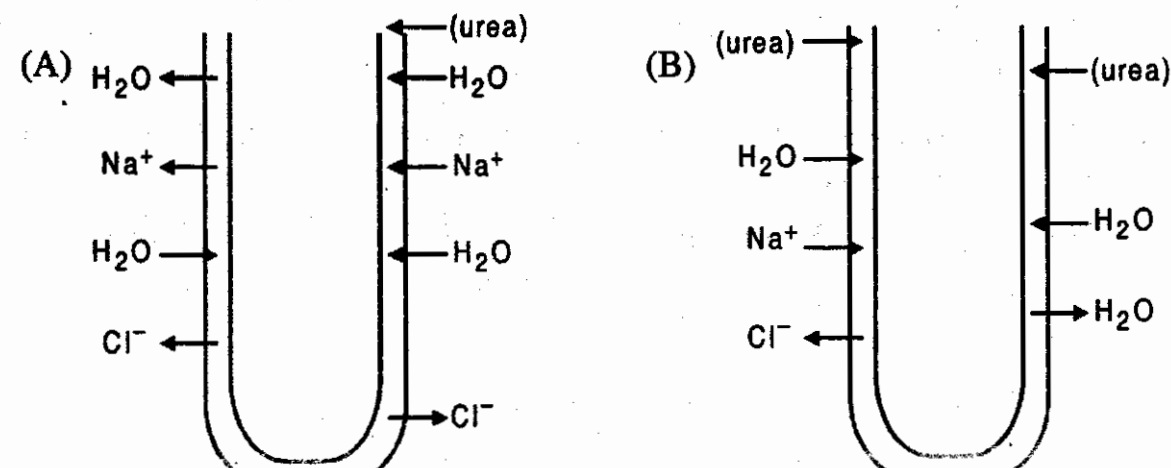
(ii) When  $\Psi_p$  value is positive at this point, difference between water potential of water within cell and that of outside the cell decreases

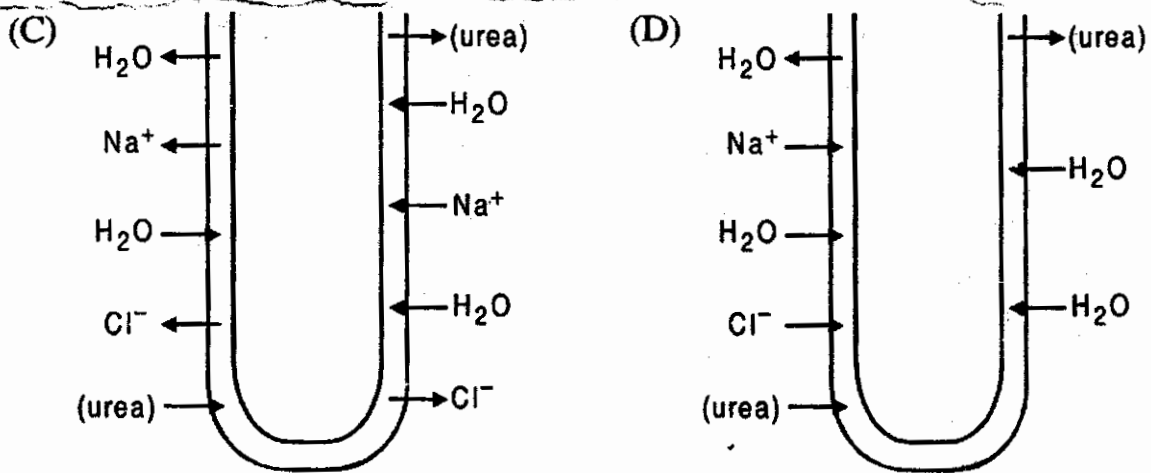
(iii) When solute concentration in cell increases, value of  $\Psi_s$  decreases

(iv) When value of  $\Psi_s$  decreases water from cell moves out from cell

(A) (ii) and (iii) (B) (ii), (i) and (iv) (C) (iii) and (i) (D) (ii) and (iv)

41. Which of the following diagram of vasa recta is correct for the exchange of various molecule ?





42. Which option is correct for the given statement X and Y ?

Statement X : Xanthophyll is known as accessory pigments and chlorophyll-a is called main reaction centre.

Statement Y : Chlorophyll-a absorb light rays and direct them towards other pigments.

- (A) X is correct and Y is wrong      (B) X is wrong and Y is correct  
 (C) X and Y both are wrong      (D) X and Y both are correct

43. In which form fatty acid and Amino acid enters respiratory path way ?

- (A) Fatty acid → Pyruvic acid; Amino acid → Acetyl Co - A  
 (B) Fatty acid → PGAL; Amino acid → DHAP  
 (C) Fatty acid → Acetyl Co - A; Amino acid → Pyruvic acid  
 (D) Fatty acid → DHAP; Amino acid → PGAL

44. Which of the following option is correct for the structure of wall of the alimentary canal?

- (A) Sub mucosa → second layer from the lumen → connective tissue, nerve, blood vessels → here glands are present in duodenum  
 (B) Sub mucosa → second layer from lumen → connective tissue, nerve blood vessels → here glands are present in stomach.  
 (C) Serosa → inner most layer → connective tissue and presence of mesothelial cells are present  
 (D) Mucosa → outer most layer → Irregular folds → presence of glands

45. Which option shows correct order of various reactions taking place while blood clotting ? Various processes

- (a) Active fibrin reacts with  $Ca^{2+}$   
 (b) Reaction of active FSF with soluble fibrin  
 (c) Thrombin takes part in process  
 (d) Formation of stable fibrin
- (A) a → b → d → c      (B) c → b → a → d  
 (C) c → a → b → d      (D) b → a → d → c

46. What is correct for the total volume of air which can be breathe by person?

(A) 1000 ml      (B) 2500 ml      (C) 3000 ml      (D) 3500 ml



(B)  $TLC = VC + RV = 5100 \text{ ml to } 5800 \text{ ml}$

(C)  $VC = TV + IRV + ERV = 4000 \text{ ml to } 4600 \text{ ml}$

(D)  $VC = TV + ERV = 4000 \text{ ml to } 4600 \text{ ml}$

47. Which of the following option shows process of inhibition ?

(A) Seedcoat breaks and seedling emerges out

(B) Wood absorb water and swell

(C) Absorption of water by colloidal system

(D) All of the given

48. In the given chart of regulation of the urine formation process, what does a, b, c and d indicates ?

(A) a = More water in body increases

b = Hypothalamus

c = Stops ADH secretion

d = Stops reabsorption from posterior region of tubule

(B) a = Water amount in body decreases

b = Hypothalamus

c = ADH is secreted

d = Reabsorption of water from posterior part of tubule

(C) a = Water amount in body decreases

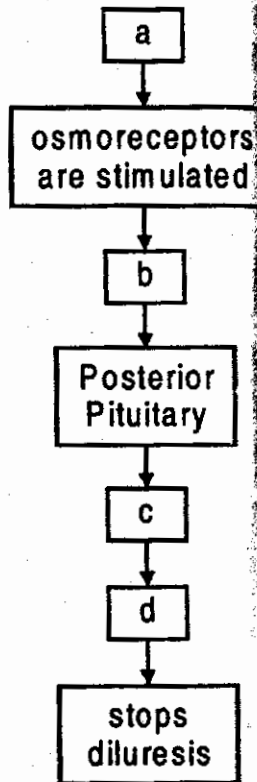
b = Medulla oblongata

c = ADH secretion starts

d = Reabsorption of water from anterior part of tubule

(D) None of the given

CHART



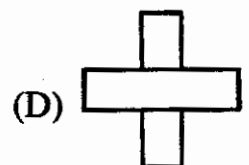
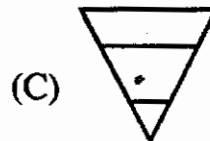
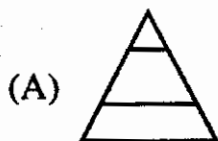
49. Which of the following is related to amoebic movement ?

(A) Macrophagus (B) Microfilaments (C) Leucocytes (D) All of the given

50. .... is pioneer species of xerosere.

(A) Lichen (B) Bacteria (C) Plankton (D) Moss

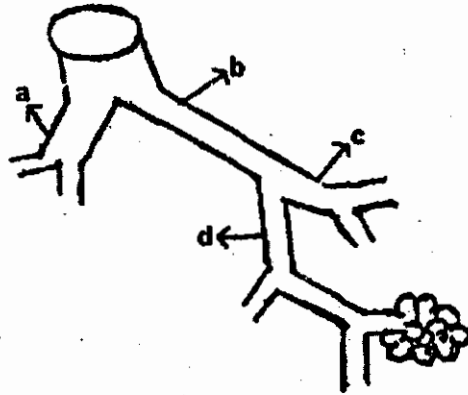
51. In a ecosystem several birds stays on each tree; on each bird several parasites are living, then what type of diagram of numbers can be constructed ?



52. Where is Thol bird sanctuary located ?

(A) Gujarat (B) Rajasthan (C) Srinagar (D) Madhya Prad

53. What is correct for the region labelled as a, b, c and d in the given diagram?



- |  |   |
|--|---|
| (A) a = Left Primary bronchus<br>b = Right Primary bronchus<br>c = Tertiary bronchus<br>d = Secondary bronchus | (B) a = Right Primary bronchus<br>b = Left Primary bronchus<br>c = Secondary bronchus<br>d = Secondary bronchus |
| (C) a = Left Primary bronchus<br>b = Right Primary bronchus<br>c = Secondary bronchus<br>d = Tertiary bronchus | (D) a = Right Primary bronchus<br>b = Left Primary bronchus<br>c = Tertiary bronchus<br>d = Secondary bronchus  |

54. Guttation is observed at [a] when transpiration is [b].

- |   |                         |
|---|-------------------------|
| (A) a = Afternoon, b = Less               | (B) a = Night, b = More |
| (C) a = Night and early morning, b = Less |                         |
| (D) a = Late morning, b = More            |                         |

55. How many molecules of ozone can be decomposed by one atom of chlorine ?

- |         |              |              |           |
|---------|--------------|--------------|-----------|
| (A) 100 | (B) 1,00,000 | (C) 2,00,000 | (D) 1,000 |
|---------|--------------|--------------|-----------|

56. In the absence of which of the following main respirable compound is not available in adequate amount to the plant ?

- |                            |                      |
|----------------------------|----------------------|
| (A) Hexokinase             | (B) Invertase        |
| (C) Pyruvate dehydrogenase | (D) Triose-isomerase |

57. In the process of haemodialysis [a] is added to the blood taken out from the artery of patient and [b] is added to blood before it is pumped in to patient body.

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| (A) a = Heparin, b = Antiheparin | (B) a = Prothrombin, b = Thrombin |
| (C) a = Antiheparin, b = Heparin | (D) a = Prothrombin, b = Heparin  |

58. What is myasthenia gravis ?

- |                                  |                                       |
|----------------------------------|---------------------------------------|
| (A) Autoimmune disease           | (B) Effect on neuro-muscular junction |
| (C) Paralysis of skeletal muscle | (D) All of the given                  |

59. Species a, b and c are found associated, with each other as under.

- (i) Species "a" get nutrition from "c"; and "c" is neither benefited nor harmed by "a".
- (ii) Species "b" gets nutrition from "c" and "c" is harmed by "b".
- (iii) Species "a" get water and mineral ion from "b" and "b" get nutrition

Then which option is correct for the interspecific association among them

- (A)  $a \leftrightarrow c =$  Commensalism  
 $b \leftrightarrow c =$  Parasitism.  
 $a \leftrightarrow b =$  Mutualism
- (B)  $a \leftrightarrow c =$  Competition  
 $b \leftrightarrow c =$  Commensalism  
 $a \leftrightarrow b =$  Predation
- (C)  $a \leftrightarrow c =$  Mutualism  
 $b \leftrightarrow c =$  Commensalism  
 $a \leftrightarrow b =$  Competition
- (D) None of the given

60. What is correct for the third stage of decomposition ?

- (A) Catabolic process by extracellular enzymes  
 (B) Anabolic process by extracellular enzyme  
 (C) Anabolic process by intracellular process  
 (D) Catabolic process by intracellular enzyme

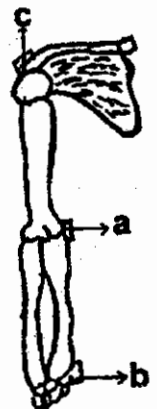
61. For the cause of extinction or to be at verge of extinction of species. Which option show correctly matched pairs ?

- (i) Over exploitation - passenger pigeon of North America  
 (ii) Alien species invasion  $\rightarrow$  Indigenous cat-fish  
 (iii) Alien species invasion  $\rightarrow$  Lion tailed macque  
 (iv) Loss of Habitat - Bignonia

- (A) (i) and (iii) are correct  
 (B) (ii), (iii) and (iv) are correct  
 (C) (iii) and (iv) are correct  
 (D) (i), (ii) and (iv) are correct

62. For the given diagram, What is correct for the structure and joints of region labelled as a, b and c ?

- (A) a = Fore arm and Wrist = Hinge joint  
 b = Elbow = Hinge joint  
 c = Pelvic girdle and femur = Ball & Socket joint
- (B) a = Fore arm and Wrist = Gliding joint  
 b = Elbow = Hinge joint  
 c = Shoulder = Ball and Socket joint
- (C) a = Elbow = Hinge joint  
 b = Fore arm and Wrist = Gliding joint  
 c = Shoulder = Ball and Socket joint
- (D) a = Elbow = Gliding joint  
 b = Fore arm and wrist = Gliding joint  
 c = Shoulder joint = Ball and socket joint



63. What is full form of IUCN ?

- (A) International Union for Community and Nature  
 (B) International Union for Council for Natural Resources

(C) International Union for Community and Natural Resources

(D) International Union for Conservation of Nature and Natural Resources

64. Animals of which phylum possesses open blood circulatory system ?

(A) Arthropoda and all mollusca

(B) Arthropoda and mollusca (other than cephalopoda)

(C) Annelida and Mollusca

(D) Cephalopoda and Annelida

65. Which option is correct for the given statement X, Y and Z ?

X : The wall of left ventricle is more muscular than the wall of right ventricle

Y : From left ventricle blood is sent to different organ of body

Z : From right ventricle blood is sent to lungs

(A) "X" is wrong, Y and Z are correct

(B) X is correct, Y and Z are wrong

(C) X, Y and Z are correct

(D) X and Y are correct and Z is wrong

66. Which cells are present in the region labelled as a, b and c in the given diagram?

(A) a = Flat cells

(B) a = Cuboidal cells

b = Cuboidal cell

b = Flat cells

c = Podocytes

c = Cuboidal cells

(C) a = Cuboidal cells

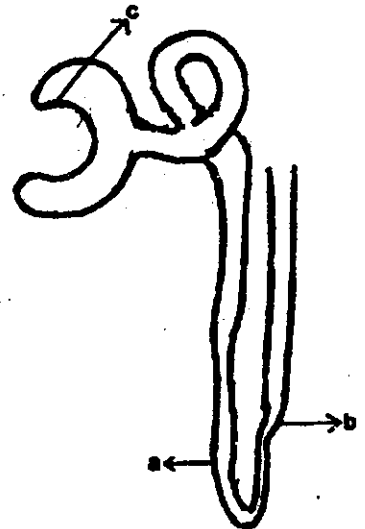
(D) a = Flat cells

b = Podocytes

b = Columnar cells

c = Columnar cells

c = Podocytes



67. Jum cultivation is harmful as well as useful as it helps in .....

(A) It decreases food production and causes afforestation

(B) It causes deforestation and increases food production

(C) It causes deforestation and help in high productivity in only medicinally useful plants

(D) None of the given

68. Which option is correct for the statement X, Y, and Z ?

X : With in one decade only turtle (Abingdon) become extinct on galapagas island

Y : The goat, which has entered island has greater browsing efficiency

Z : Abingdon turtle have failed to adjust with changed in temperature

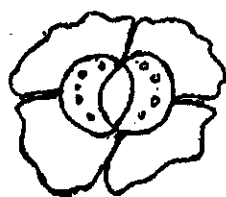
(A) X, Y and Z are correct and Y and Z are correct explanation for X

(B) X and Y are correct and Z is wrong, Y does not give correct explanation of X.

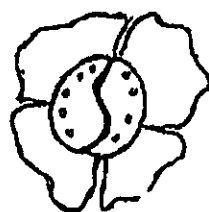
(C) X and Z are correct and Y is wrong

(D) X, Y are correct Z is wrong and Y is correct explanation for X

69. Diagram (a) and (b) indicate certain physiological conditions; which option - correct for the same ?



(a)



(b)

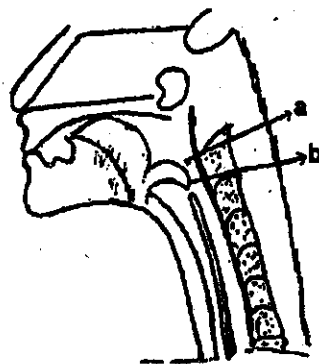
- (A) a → High turgor pressure and endosmosis, b → Low turgor pressure  
 (B) a → Low turgor pressure, b → High turgor pressure  
 (C) a → Inner wall facing stomatal aperture creates pressure on outer wall  
 b → Outer wall creates pressure on inner wall  
 (D) None of the given
70. Porins are [a]. They make [b] pores on outer membrane of several organelles.  
 (A) a = Nucleotides, b = Very small (B) a = Protein, b = Huge  
 (C) a = Protein, b = Very small (D) a = Lipid, b = Huge
71. In farm deficiency symptoms are observed in species A and B. The deficiency symptoms are listed under;  
 Species A : Accumulation of purple pigments and brownish spots on young leaves, next to their vein;  
 Species B : Leaf margin of young starts dying and pale green leaves with rolled margin;  
 To cure these symptoms, which mineral ions should be added to soil for species A and species B ?  
 (A) Species A → S, Mn (B) Species A →  $Ca^{+2}$ ,  
 Species B →  $Ca^{2+}$ , Mo Species B → S,  $Mn^{+2}$   
 (C) Species A → Cu, S (D) Species A → B,  $Cl^-$   
 Species B → P, Mn Species B →  $Cl^-$ , Fe
72. How many ATP molecules are produced during cyclic photophosphorylation during photosynthesis ?  
 (A) 2 ATP (B) 1 ATP (C) 8 ATP (D) 4 ATP
73. If during complete oxidation of seven (7) molecules of glucose, all DHA molecules do not get converted into PGAL molecule, then in this condition, complete oxidation of seven molecules of glucose,  
 (i) How many NAD molecules will be utilized ?  
 (ii) How many Krebs cycle will occur and  
 (iii) How many ATP molecules through substrate based phosphorylation ?  
 (A) (i) 28 NAD, (ii) 14 Krebs cycle, (iii) 14 ATP  
 (B) (i) 30 NAD, (ii) 7 Krebs cycle, (iii) 7 ATP  
 (C) (i) 14 ATP, (ii) 7 Krebs cycle, (iii) 7 ATP

74. The Tongue is attached to the [a] of the oral cavity by [b].  
 (A) a = Frenulum, b = Floor (B) a = Palate, b = Uvula  
 (C) a = Floor, b = Uvula (D) a = Floor, b = Frenulum
75. Which statement is completely correct for the structure of lungs ?  
 (A) Right lung is heavy and it has cardiac notch  
 (B) Left lungs has two lobes, it is lighter and it has cardiac notch  
 (C) Right lung is thinner, narrower and lighter  
 (D) Left lungs has three lobes and it is heavy
76. Which option is correct for the statements X, Y and Z.  
**X : If Rh<sup>-ve</sup> female has her first child with Rh<sup>+ve</sup> blood, then it is necessary to remove Rh<sup>+ve</sup> antibody from her blood through proper treatment after the birth of child.**  
**Y : If this female conceive Rh<sup>-ve</sup> child in her second pregnancy then there is chance of haemolytic disease in child.**  
**Z : During her first pregnancy, Rh<sup>+ve</sup> antibodies are produced in her blood.**  
 (A) X and Z are correct, Y is wrong and Z does no give correct explanation for X  
 (B) X and Z are correct, Y is wrong; and Z is correct reason for X  
 (C) Y is correct and X and Z are wrong  
 (D) X and Y are correct, Z is wrong and Y gives correct explanation of X
77. For the given statement X, Y and Z, which option is correct ?  
**"X" = Urine become more concentrated in distal convoluted tubule**  
**"Y" = Urea diffuses out of the distal convoluted tubule**  
**"Z" = Uric acid and Ammonia are secreted in distal convoluted tubule**  
 (A) "X" and "Z" are correct, Y is wrong "Z" is one reason for X  
 (B) X and Y are correct, Z is wrong, and Y is correct explanation for X  
 (C) X is correct and Y and Z are wrong  
 (D) X, Y and Z are correct and Y and Z are correct explanation for X
78. If Mg<sup>2+</sup> is completely removed from muscle, polymerization of which of the following will not occur ?  
 (A) F-actin (B) Tropomyosin (C) Troponin (D) G-actin
79. Which option shows correctly matched pairs of animal and its water relations?  
 (A) Protopterus - hygroscopic skin  
 (B) Lizard uromatrix-stores water in intestine  
 (C) Ophiocephalus - contractile vacuole  
 (D) Camel - stores water in cells of rectum
80. Which option is correct ?  
 (A) NPP = GPP - Respiratory loss (B) NPP = GPP + Respiratory loss  
 (C) GPP + NPP = Respiratory loss (D) GPP = NPP - Respiratory loss

81. It is relative richness of different species along gradient from one habitat to the other habitat in community.  
(A)  $\alpha$ -diversity (B)  $\gamma$ -diversity (C) Ecosystem diversity (D)  $\beta$ -diversity
82. Which compound used-in refrigerator is a source of chlorine ?  
(A) Freon (B) HFe (C) BHC (D) None of the given
83. Transport proteins, present in its plasma membrane acts as control points to adjust the quantity and types of solute in xylem.  
(A) Vacuole (B) Root hair cells  
(C) Cortical cells (D) Endodermal cells
84. Secondary nutrients are [a] in soil; [b] and [c] are example of them; and their required amount for plant growth is [d] to [e] per every gram of dry body mass.  
(A) a = Not enough, b = N, c = P, d = 1 mg, e = 10 mg  
(B) a = usually enough, b = N, c = P, d = 0.1 mg, e = 1 mg  
(C) a = usually enough, b =  $Mg^{+2}$ , c = S, d = 1 mg, e = 10 mg  
(D) a = not enough, b = B, c =  $M_o$ ; d = 0.1 mg, e = 1 mg
85. Which option is correct for the enzymes involve in nitrogen fixation ?  
(A) Nitrogenase - Iron containing protein Hydrogenase - Molybdenum containing protein  
(B) Nitrogenase - Molybdenum containing protein Hydrogenase - Iron containing protein  
(C) Denitrogenase - Iron containing protein Hydroxylase - Iron containing protein  
(D) Nitrogenase - Manganese containing protein Hydrogenase - Zinc containing protein
86. Who established, that only chlorophyll containing organs of plant can release  $O_2$  ?  
(A) Jon Ingenhousz (B) Julius Von Sachs  
(C) Robert Hill (D) Joseph Priestly
87. A method of hydroponics, where seedling are raised in environment saturated with fine drops of nutrient called \_\_\_\_\_.  
(A) Aeroponics (B) Continuous flow solution culture  
(C) Suspension culture (D) Static solution culture
88. Digestion of which of the following is affected, when enterokinase is not secreted?  
(A) Protein digestion in stomach (B) Protein digestion in small intestine  
(C) Lipid digestion in small intestine

9. What is correct for the region labelled as "a" and "b" in the given diagram?

- (A) a = Larynx, b = Oesophagus
- (B) a = Pharynx, b = Epiglottis
- (C) a = Pharynx, b = Larynx
- (D) a = Oesophagus, b = Epiglottis



90. Which process is correct for the CO<sub>2</sub> transport by buffer ?

- (A) In Plasma :  $\text{Na.Pb} + \text{H}_2\text{CO}_3 \rightarrow \text{NaHCO}_3 + \text{H.Pb}$
- (B) In R.B.C :  $\text{NaHCO}_3 \rightarrow \text{Na}^+ + \text{HCO}_3^-$
- (C) In Plasma :  $\text{Na}_2\text{HPO}_4 + \text{H}_2\text{CO}_3 \rightarrow \text{NaHCO}_3 + \text{NaH}_2\text{PO}_4$
- (D) In R.B.C. :  $\text{Na}_2\text{HPO}_4 + \text{H}_2\text{CO}_3 \rightarrow \text{NaHCO}_3 + \text{NaH}_2\text{PO}_4$

91. Which option is correct for statement "X" and statement "Y" ?

**Statement "X" :** In intrinsic pathway of thromboplastin formation initiating factor is derived from injured tissue.

**Statement "Y" :** It starts with activation of Hageman factor.

- (A) "X" is correct and "Y" is wrong
- (B) "X" and "Y" both are wrong
- (C) "X" is wrong and "Y" is correct
- (D) "X" and "Y" both are correct

92. The amount of filtrate which is formed in [a], in [b] kidney and in [c] nephron, is called GFR.

- (A) a = Per second, b = Any one, c = All
- (B) a = Per minute, b = Both, c = All
- (C) a = Per minute, b = Any one, c = 50%
- (D) a = Per second, b = Both, c = all

93. Which option is correct for the stage of respiration, when diaphragm relaxes?

- (A) It moves up and expiration takes place
- (B) It moves down and inspiration takes place
- (C) It moves down and expiration takes place
- (D) It moves up and inspiration takes place

94. Which option is correct for statement X and Y ?

**Statement X :** Some fresh water fish can maintain salt level of their body

**Statement Y :** These fishes have chloride cells in their gills

- (A) X and Y both are correct and Y is correct reason of X
- (B) X and Y both are correct and Y is not correct reason of X
- (C) Y is correct and X is wrong
- (D) Y is incorrect and X is wrong



95. Which option shows, all correct statements about CAM ?

- (i) It is an adaptation for hydrophytic life
- (ii) CO<sub>2</sub> enters in stomata during night
- (iii) Calvin cycle takes place only in night

(A) (ii) (B) (i), (ii) and (iii) (C) (i) and (iii) (D) (iii)

96. Which option shows all correctly matches pairs, for Column-I and Column-II.

Column I	Column II
(a) Largest breeding ground of flamingos	(i) Bhal region
(b) Giant flying squirrel	(ii) Valsad
(c) Rata wheat	(iii) Shool Paneshwar
(d) Painted frog	(iv) Great Rann of Kachchh (kutch)

(A) (a - iv), (b - iii), (c - i), (d - ii) (B) (a - iii), (b - i), (c - ii), (d - iv)  
 (C) (a - iv), (b - iii), (c - ii), (d - i) (D) (a - ii), (b - i), (c - iii), (d - iv)

97. It is world's problematic aquatic weed.

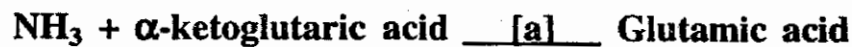
- (A) Hydrilla (B) Eichhornia crassipes
- (C) Chara (D) Wolffia

98. Which option is correct for all Correctly matched pairs for Column-I and Column - II.

Column-I (Plants)	Column - II (Their water relation)
(a) Mustard plant	(i) Water amount is 60% or less than that
(b) A mature corn plant	(ii) Water level is upto 98%
(c) Xerophytes	(iii) Absorb three (3) litre water per day
(d) Hydrophytes	(iv) Water amount is upto 80%
	(v) Absorb water equal to its own weight in 5 (five) hours
	(vi) Absorb water equal to its own weight in one (1) hour

(A) (a - iii), (b - v), (c - ii), (d - i) (B) (a - vi), (b - iii), (c - i), (d - iv)  
 (C) (a - v), (b - iii), (c - i), (d - ii) (D) (a - vi), (b - v), (c - i), (d - iv)

99. What does 'a' indicate in the given process ?



- (A) Glutamate decarboxylase (B) Glutamate transaminase
- (C) Glutamate hydroxylase (D) Glutamate dehydrogenase

100. Which option is correct for formation of serine during photorespiration ?

- (A) H<sub>2</sub>O<sub>2</sub> is released from Glyoxylate
- (B) From one molecule of glycine, NH<sub>3</sub> and CO<sub>2</sub> are removed and NADH<sub>2</sub> is converted into NAD
- (C) 2 glycine unites, NH<sub>2</sub> is released and NADH<sub>2</sub> and CO<sub>2</sub> combines with glycine
- (D) Two glycine molecule unite; removal of NH<sub>3</sub>, CO<sub>2</sub> and reduction of NAD to NADH<sub>2</sub>.

## QUESTION PAPER-2 : OCTOBER 2012

1. (B)
2. (D)
3. (B)
4. (A)
5. (B)
6. (C)
7. (C)
8. (A)
9. (B)
10. (B)
11. (D)
12. (B)
13. (A)
14. (B)
15. (A)
16. (C)
17. (A)
18. (C)
19. (D)
20. (A)
21. (C)
22. (B)
23. (C)
24. (B)
25. (D)
26. (D)
27. (A)
28. (C)
29. (A)
30. (B)
31. (D)
32. (B)
33. (D)
34. (C)
35. (B)
36. (B)
37. (A)
38. (C)
39. (B)
40. (A)
41. (C)
42. (A)
43. (C)
44. (A)
45. (C)
46. (C)
47. (D)
48. (B)
49. (D)
50. (A)
51. (C)
52. (A)
53. (B)
54. (C)
55. (B)
56. (C)
57. (A)
58. (D)
59. (A)
60. (D)
61. (D)
62. (C)
63. (A)
64. (B)
65. (C)
66. (A)
67. (B)
68. (D)
69. (A)
70. (B)
71. (A)
72. (A)
73. (D)
74. (D)
75. (B)
76. (B)
77. (A)
78. (D)
79. (B)
80. (A)
81. (D)
82. (A)
83. (A)
84. (C)
85. (A)
86. (B)
87. (A)
88. (B)
89. (B)
90. (C)
91. (C)
92. (B)
93. (A)
94. (B)
95. (A)
96. (A)
97. (D)
98. (D)
99. (D)
100. (D)