

# 12<sup>th</sup> GSEB SEMESTER – 3 BIOLOGY PAPER SOLUTION

## DATE – 19-10-2016

### SET – 13

- 1) Muscle contraction takes place in human when  
 (A) always anaerobic respiration takes place.  
 (B) oxygen is inadequate anaerobic respiration takes place  
 (C) anaerobic respiration never takes place  
 (D) respiration does not take place.

Ans. (B) oxygen is inadequate anaerobic respiration takes place

[Page 44]

- 2) What products are formed as a result of photolysis of 8 H<sub>2</sub>O molecules.  
 (A) NADPH<sub>2</sub>, H<sub>2</sub>O, O<sub>2</sub>  
 (B) 2 NADPH<sub>2</sub>, 2H<sub>2</sub>O, O<sub>2</sub>  
 (C) NADPH<sub>2</sub>, 4H<sub>2</sub>O, 2O<sub>2</sub>  
 (D) 2H<sub>2</sub>O, O<sub>2</sub>, 4e<sup>-</sup>

Ans. (C) NADPH<sub>2</sub>, 4H<sub>2</sub>O, 2O<sub>2</sub>

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- 3) When podocytes are arranged in a complicated manner, they leave small spaces which are known as.  
 (A) seive pores (B) filtration sieves (C) filtration chambers (D) filtration slits

Ans. (D) filtration slits

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- 4) ADH facilitates water reabsorption from posterior parts of the tubules to prevent-  
 (A) Uremia (B) Diuresis (C) Glycosuria (D) None of the above

Ans. (B) Diuresis

[Page 96]

- 5) Match the pair and choose the correct option

Column - I	Column - II
a) Renin	1) Proteoses + peptones → polypeptides, amino acids
b) Erepsin	2) Polypeptide → peptides and amino acid
c) Trypsin	3) Casein → Paracasein
d) Carboxypeptidase	4) Dipeptides → amino acids
e) Chymotrypsin	5) Polypeptides → smaller polypeptides, a few free amino acids

(A) (a - 3) (b - 4) (c - 2) (d - 5) (e - 1)

(B) (a - 2) (b - 4) (c - 3) (d - 5) (e - 1)

(C) (a - 3) (b - 4) (c - 1) (d - 2) (e - 5)

(D) (a - 2) (b - 3) (c - 5) (d - 1) (e - 4)

Ans. (C) (a - 3) (b - 4) (c - 1) (d - 2) (e - 5)

[Page 60]

- 6) Which is the most dilatible portion of the alimentary canal?  
 (A) stomach

- (B) large intestine
- (C) duodenum
- (D) small intestine

Ans. (A) Stomach

[Page 56]

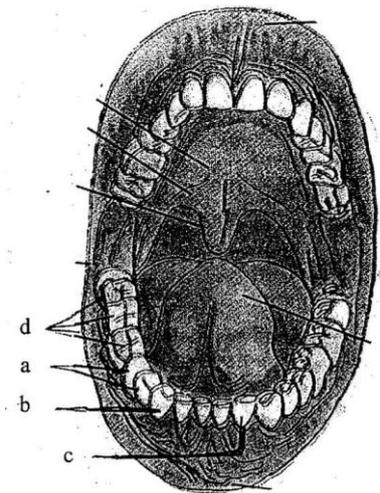
7) Which pigments are responsible for the colour of bile?

- (A) Organic salts
- (B) Cholesterol
- (C) Bilirubin, Biliverdin
- (D) Inorganic salts

Ans. (C) Bilirubin, Biliverdin

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8) Which types of teeth are denoted by a, b, c and d in the given diagram?



- (A) (a - pre molars) (b - canine) (c - molars) (d - incisors)
- (B) (a - canine) (b - incisors) (c - pre molars) (d - molars)
- (C) (a - pre molars) (b - canine) (c - incisors) (d - molars)
- (D) (a - molars) (b - incisors) (c - pre molars) (d - canine)

Ans. (C) (a - pre molars) (b - canine) (c - incisors) (d - molars)

[Page 54]

9) Which mechanism is evolved in birds and mammals to excrete concentrated hypertonic urine?

- (A) Diffusion
- (B) Counter current mechanism
- (C) Current mechanism
- (D) Concentration mechanism

Ans. (B) Counter current mechanism

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10) A disease caused by bacterial infection in kidney is known as:

- (A) Glycosuria
- (B) Renal calculi
- (C) Nephritis
- (D) Uremia

Ans. (C) Nephritis

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11) To maintain osmoregulation by marine fishes they retain certain amount of \_\_\_\_\_ in kidney matrix.

- (A) Ammonia
- (B) Uric acid
- (C) Urea
- (D) A and B both

Ans. (C) Urea

[Page 90]

12) GFR in a healthy individual is about \_\_\_\_\_.

- (A) 100 ml / minute
- (B) 200 ml/minute
- (C) 250 ml / minute
- (D) 125 ml/minute

Ans. (D) 125 ml/minute

[Page 93]

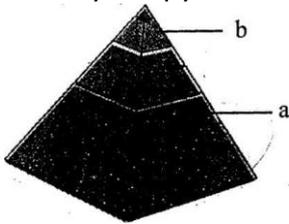
13) The amount of energy storage at consumer level is called

- (A) Gross primary productivity
- (B) Secondary productivity
- (C) Net primary productivity
- (D) Net productivity

Ans. (B) Secondary productivity

[Page 135]

14) Identify the pyramid and label 'a' and 'b' choose the correct option.



- (A) Pyramid of Numbers ; a = Herbivores b = producers
- (B) Pyramid of Biomass; a = Producers, b = Carnivores
- (C) Pyramid of Energy; a = Producers, b = Carnivores
- (D) Pyramid of Energy; a = Producers, b = Herbivores

Ans. (C) Pyramid of Energy; a = Producers, b = Carnivores

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15) Ulcerative colitis is characterized by:

- (A) Marked ulceration in colon
- (B) Dilation of colon
- (C) Stools contains blood and mucus
- (D) All the above

Ans. (D) All the above

[Page 62]

16) Pancreozymin stimulates:

- (A) secretion of intestinal juice
- (B) gastric gland to release gastric juice
- (C) pancreas to release pancreatic juice
- (D) gall bladder to release bile juice

Ans. (C) pancreas to release pancreatic juice

[Page 61]

17) Statement A : In DCT - absorption of water,  $\text{Na}^+$  and  $\text{HCO}_3^-$  takes place  
Statement B :  $\text{Na}^+$  balance,  $\text{K}^+$  balance and pH is maintained in DCT.

- (A) A is wrong and B is correct  
(B) A and B both are correct but A is not the explanation for B  
(C) A is correct but B is wrong  
(D) A and B both are correct A gives explanation for B

Ans. (D) A and B both are correct A gives explanation for B

[Page 93]

18) Match proper pair

Column - I	Column - II
1) Silt particle	a) Large
2) Sand particle	b) Colloids
3) Clay particle	c) Medium
4) Very small clay particle	d) Small

- (A) (1 - c) (2 - a) (3 - d) (4 - b)  
(B) (1 - b) (2 - c) (3 - a) (4 - d)  
(C) (1 - c) (2 - b) (3 - d) (4 - a)  
(D) (1 - a) (2 - d) (3 - c) (4 - b)

Ans. (A) (1 - c) (2 - a) (3 - d) (4 - b)

[Page 59]

19) Which acid acts as a main donar of amino group during transamination process?

- (A) Fumaric acid  
(B) glutamic acid  
(C) Aspartic acid  
(D) Oxalo acetic acid

Ans. (B) glutamic acid

[Page 25]

20) The method of hydroponics where seedlings are raised in an environment saturated with aerosol of nutrient solution is known as:

- (A) Continuous flow solution culture  
(B) Aeroponics  
(C) Static solution culture  
(D) Organoponics

Ans. (B) Aeroponics

[Page 14]

21) Moderate increase of micronutrients causes \_\_\_ X \_\_\_ and excess of manganese induces deficiency of \_\_\_ Y \_\_\_. Mention X and Y.

- (A) X - Deficiency, Y - Fe, Mg, S  
(B) X - Deficiency, Y - Mn, S, N  
(C) X - Toxicity, Y - Fe, Mn, Ca  
(D) X - Toxicity, Y - Fe, Mg, Ca

Ans. (D) X - Toxicity, Y - Fe, Mg, Ca

[Page 20]

22) Match column I and II and choose correct option,

Column-I		Column-II	
p)	Diffusion	i)	Suction pressure
q)	Ion exchange	ii)	expenditure of metabolic energy
r)	Donnan Equilibrium	iii)	Cell wall
s)	Principle of Mass flow	iv)	Ion channels
t)	Active absorption	v)	Plasma membrane

(A) (p - v) (q - i) (r - ii) (s - iii) (t - iv)

(B) (p - ii) (q - iii) (r - iv) (s - v) (t - i)

(C) (p - iv) (q - iii) (r - v) (s - ii) (t - i)

(D) (p - iv) (q - iii) (r - v) (s - i) (t - ii)

Ans. (D) (p - iv) (q - iii) (r - v) (s - i) (t - ii)

[Page 21]

23) Which part of the tooth contains connective tissue cells, blood vessels and nerves?

(A) Enamel

(B) Dentine

(C) Pulp

(D) Crown

Ans. (C) Pulp

[Page 54]

24) A compound racemose gland, very similar in structure to the salivary glands is known as:

(A) Pancreas

(B) Sub lingual gland

(C) Parotid gland

(D) Sub mandibular gland

Ans. (A) Pancreas

[Page 57]

25) A modern source of phosphorus in streams and lakes are

(A) Phosphate rocks

(B) Common household detergents

(C) Bacteria

(D) Mycorrhiza

Ans. (B) Common household detergents

[Page 137]

26) Through which process, faecal waste of detritus animals reaches to the deeper region of soil?

(A) seeping

(B) absorption

(C) leaching

(D) suction

Ans. (C) leaching

[Page 136]

27) When blood from the artery of a hemodialysing patient is pumped out \_\_X\_\_ is mixed with it, and when blood is pumped back into his vein \_\_Y\_\_ is mixed.

(A) X - heparin, Y - Antiheparin

(B) X - antiheparin, Y - heparin

(C) X - heparin, Y - cutin

(D) X - heparin, Y – silicon

Ans. (A) X - heparin, Y - Antiheparin

[Page 96,97]

28) 'X' is an example of inter specific interaction and 'Y' is succession. Which is the correct option of correlation of X and Y?

- (A) X - Lichen, Y - Hydrosere  
 (B) X -Sea anemone, Y - Mesosere  
 (C) X - Lichen, Y - Xerosere  
 (D) X - Hermit crab, Y – Xerosere

Ans. (C) X - Lichen, Y – Xerosere (option B,C,D all seems correct according to language of qs)

[Page 122,126]

29) Which is not included in Hydroseric stage of Ecological Succession?

- (A) Sedge meadow stage  
 (B) Grass community  
 (C) Phytoplankton  
 (D) Forest community

Ans. (B) Grass community

[Page 125]

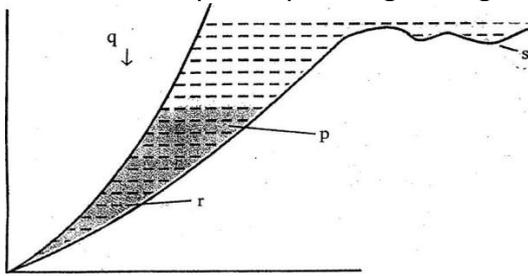
30) Ecology is divided into how many branches?

- (A) 13  
 (B) 11  
 (C) 12  
 (D) 10

Ans. (D) 10

[Page 111]

31) What indicate p and q in the given figure?



- (A) p = Potential natality, q = Realised natality  
 (B) p = Potential natality, q = Environmental resistance  
 (C) p = Environmental resistance q = Potential natality  
 (D) p = Realised natality q = Equilibrium

Ans. (C) p = Environmental resistance q = Potential natality

[Page 117]

32) Match the pair. Choose correct option

Column - I	Column - II
p - Endoparasite	x – Plasmodium
q - Permanent parasite	y- leech
r - Temporary parasite	z - Tapeworm
s - Ectoparasite	w - larval form

- (A) (p - z) (q - y) (r - w) (s - x)
- (B) (p - x) (q - z) (r - w) (s - y)
- (C) (p - z) (q - w) (r - y) (s - x)
- (D) (p - x) (q - w) (r - z) (s - y)

Ans. (B) (p - x) (q - z) (r - w) (s - y)

[Page 123]

33) In which option, both interactions are indicated by (+, -) sign?

- (A) Parasitism - Amensalism
- (B) Predation - Commensalism
- (C) Predation - Parasitism
- (D) Mutualism – Predation

Ans. (C) Predation - Parasitism

[Page 122]

34) If the pond is gradually filled with sand and mud then its biotic community is changed into :

- (A) xerophytic community
- (B) forest community
- (C) marshy land community
- (D) A and B both

Ans. (C) marshy land community

[Page 125]

35) A Population which is characterised by fluctuations of individuals, such a population is known as:

- (A) Stable population
- (B) Increasing population
- (C) Equilibrium population
- (D) Expanding population

Ans. (A) Stable population

[Page 120]

36) GPP of which Ecosystem will be the highest?

- (A) There will be no change in GPP.
- (B) Ecosystem has more no. of producers, with less content of chlorophyll and more CO<sub>2</sub> conc.
- (C) Ecosystem has poor no. of producers, with more content of chlorophyll and less conc. of CO<sub>2</sub>.
- (D) Ecosystem has more no. of producers, with more chlorophyll content and more CO<sub>2</sub> concentration.

Ans. (D) Ecosystem has more no. of producers, with more chlorophyll content and more CO<sub>2</sub> concentration

[Page 135]

37) To adapt for dry condition which acid is used by plants for metabolism?

- (A) Citric acid
- (B) Pyruvic acid
- (C) Crassulacean acid
- (D) Oxalo acetic acid

Ans. (C) crassulacean acid

[Page 138]

38) In ancient times people lived longer because the air was composed of -  
 (A) 80% oxygen (B) 30% oxygen (C) 23% oxygen (D) 40% oxygen  
 Ans. (D) 40% oxygen [Page 138]

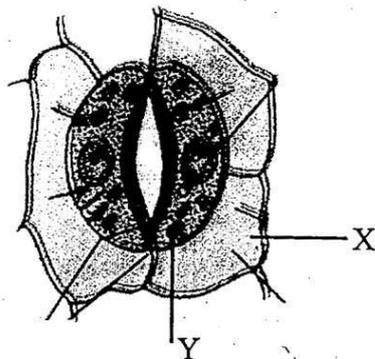
39) Which of the following organisms show maximum biological magnification?  
 (A) Zoo planktons (B) Small fishes  
 (C) Large fishes (D) Fish eating birds  
 Ans. (D) fish eating birds [Page 163]

40) Nomenclature of Rh of blood group name is derived from.  
 (A) Russian monkey  
 (B) Rhesus monkey  
 (C) Gorilla monkey  
 (D) Chimpanzy monkey  
 Ans. (B) Rhesus monkey [Page 79]

41) Which type of competition is found between paramoecium caudatum & paramoecium aurelia?  
 (A) Inter specific  
 (B) Intra specific  
 (C) Extra specific  
 (D) None of this  
 Ans. (A) Interspecific [Page 123]

42) When a dry grape is placed in water, what will happen?  
 (A) simple diffusion (B) exosmosis (C) plasmolysis (D) endosmosis  
 Ans. (D) Endosmosis [Page 4]

43) Identify the indicated parts X and Y in the following figure.



(A) chloroplast, epidermal cells  
 (B) epidermal cells, chloroplast  
 (C) guard cells, chloroplast  
 (D) chloroplast, guard cells  
 Ans. (B) epidermal cells, chloroplast [Page 8]

44) Which is the path to absorb the water in root?  
 (A) cortex → pericycle → epidermis → endodermis

- (B) cortex → endodermis → pericycle → epidermis  
 (C) epidermis → pericycle → endodermis → cortex  
 (D) epidermis → cortex → endodermis → pericycle

Ans. (D) epidermis → cortex → endodermis → pericycle

[Page 6 Diagram]

45) The lower surface of a leaf is observed with more number of stomata. Identify the type of leaf.

- (A) hypodermal leaf  
 (B) dorsiventral leaf  
 (C) isolateral leaf  
 (D) epidermal leaf

Ans. (B) Dorsiventral leaf

[Page 8]

46) Give location of control points during transportation of mineral nutrients.

- (A) In hypodermal layer  
 (B) In endodermal layer  
 (C) In cortex  
 (D) In epidermal layer

Ans. (B) In endodermal layer

[Page 9]

47) Which is the correct pair?

- (A) Cytoplasm - 90% quantity of water  
 (B) Maize plant - absorbs 3 liters of water during night  
 (C) Mustard plant - absorbs less water to its own weight in about 5 hour  
 (D) Dry seed - has water

Ans. (D) Dry seed – has water

[Page 3]

48) Match the pair with correct option.

Column - I	Column - II
i) Apoplast pathway	(a) food is transported from source to sink
ii) Symplast pathway	(b) water is pushed forcibly through cellular membrane
iii) Transmembrane transport	(c) water moves through the plasmodesmata
iv) Mass flow	(d) water moves through cell wall

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

Ans. (A) (i-d, ii - c, iii - b, iv - a)

[Page 6]

49) Absorption of minerals are an active transport because\_\_\_\_\_.

- (A) minerals are present as charged particles and the concentration of minerals in the soil is lower than that of the roots.  
 (B) they can move across the cell membrane  
 (C) the concentration of minerals in the soil is higher than that of the roots.  
 (D) minerals have only positive charged particles

Ans. (A) minerals are present as charged particles and the concentration of minerals in the soil is lower than that of the roots **[Page 9]**

50) What is responsible to keep the respiratory passage open?

- (A) at short distances 'C' shaped cartilaginous ring
- (B) 'O' - shaped cartilaginous ring
- (C) at long distances 'C' shaped ring
- (D) 'C' - shaped bony ring

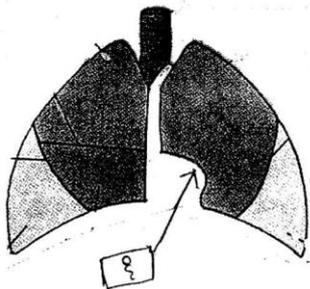
Ans. (A) at short distances 'C' shaped cartilaginous ring **[Page 68]**

51) Which is the occupational lung disease?

- (A) Pneumonia
- (B) Asthma
- (C) Silicosis
- (D) Varicose vein

Ans. (C) Silicosis **[Page 75]**

52) Identify the indicated part in following figure.



- (A) cardiac notch
- (B) lower lobe
- (C) oblique fissure
- (D) middle lobe

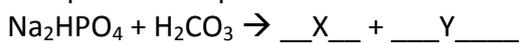
Ans. (A) Cardiac notch **[Page 69]**

53) Which is the correct option for respiratory volumes?

- (A) IC = 4000 ml. to 4600 ml
- (B) FRC = 2100 ml. to 2300 ml.
- (C) EC = 3000 ml. to 3500 ml.
- (D) VC = 1500 ml. to 1600 ml.

Ans. (B) FRC = 2100 ml. to 2300 ml. **[Page 70]**

54) Complete the equation.



- (A) X =  $\text{NaHCO}_3$ , Y =  $\text{HCO}_3^-$
- (B) X =  $\text{NaHCO}_3$ , Y =  $\text{NaHPO}_4$
- (C) X =  $\text{HCO}_3^-$ , Y =  $\text{NaH}_2\text{PO}_4$
- (D) X =  $\text{NaHCO}_3$ , Y =  $\text{NaH}_2\text{PO}_4$

Ans. (D) X =  $\text{NaHCO}_3$ , Y =  $\text{NaH}_2\text{PO}_4$  **[Page 72]**

55) Name the Hb. NH.COOH compound.

- (A) Haemoglobinic acid
- (B) Reduced haemoglobin

- (C) Amino haemoglobin  
(D) Carbaminohaemoglobin

Ans. (D) Carbaminohaemoglobin

[Page 72]

56) This is not a symptom of Bronchitis.

- (A) severe burning in trachea  
(B) alveoli of lungs filled with dead WBCs  
(C) yellowish cough  
(D) large amount of cough

Ans. (B) alveoli of lungs filled with dead WBCs

[Page 74,75]

57) When the size of thoracic cavity increases?

- (A) When muscles of diaphragm and the diaphragm are in normal condition  
(B) When muscles of diaphragm relaxed, the diaphragm is pulled downwards  
(C) When muscles of diaphragm contract, the diaphragm is pulled upwards  
(D) When muscles of diaphragm contract, the diaphragm is pulled downwards

Ans. (D) When muscles of diaphragm contract, the diaphragm is pulled downwards

[Page 70]

58) State the Antigen of the person having 'O' blood group.

- (A) A antigen  
(B) A and B antigen  
(C) B antigen  
(D) Having no antigen

Ans. (D) Having no antigen

[Page 79]

59) Name the fibres which transport stimuli from AV-node to ventricle

- (A) indistinguished group  
(B) Bundle of his  
(C) blood group  
(D) bundle of muscle

Ans. (B) Bundle of his

[Page 86]

60) Match the pair with correct option

Cell type		Function	
a)	erythrocyte	i)	need for blood clotting
b)	lymphocytes J <sup>^</sup> XT	ii)	active phagocytes
c)	monocytes	iii)	transportation of O <sub>2</sub> and CO <sub>2</sub>
d)	platelets	iv)	it is a part of immune system

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

Ans. (A) (a - iii, b - iv, c - ii, d - i)

[Page 78]

61) How much systolic pressure will have in a normal healthy businessman?

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- (A) 140 mmHg
- (B) 100 mmHg
- (C) 120 mmHg
- (D) 80 mmHg

Ans. (C) 120 mmHg

[Page 86]

62) Find out the correct option for statement P and statement Q.

Statement P : Salts are as a blood plasma constituents.

Statement Q : One of the function is regulation of membrane permeability from major functions of salts.

- (A) Statement P is false and Q is true
- (B) Statement P and Q both are false
- (C) Statement P is true and Q is false
- (D) Statement P and Q both are true

Ans. (D) Statement P and Q both are true

[Page 77]

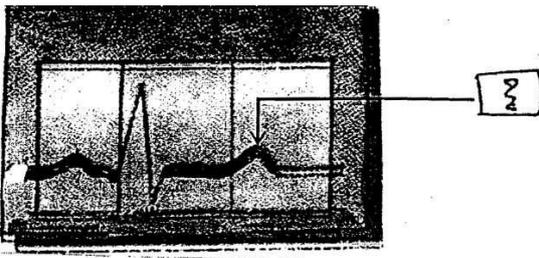
63) Which is the time-gap for cardiac cycle when atria and ventricles both undergo to diastole

- (A) 0.80 seconds
- (B) 0.30 seconds
- (C) 0.40 seconds
- (D) 0.10 seconds

Ans. (C) 0.40 seconds

[Page 84]

64) Give the function of indicated part in following figure.



- (A) Collectively indicate the contraction of ventricles
- (B) Indicate the contraction of ventricles
- (C) Indicates diastole of ventricles
- (D) Related to systole of auricles

Ans. (C) Indicates diastole of ventricles

[Page 85]

65) Which is the true option for the composition of lymph?

- (A) RBCs are more than blood plasma
- (B) It contains more fibrinogen than blood plasma
- (C) it has waste from tissue metabolism.
- (D) Protein contents are more than blood plasma

Ans. (C) it has waste from tissue metabolism

[Page 81]

66) Match the pair with correct option.

National Park		State	
a)	Sundarbans	i)	Madhya Pradesh
b)	Kaziranga	ii)	Uttar Pradesh
c)	Corbett	iii)	West Bengal
d)	Kanha	iv)	Assam

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

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

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

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

Ans. (A) (a - iii, b - iv, c - ii, d - i)

[Page 152]

67) Which is the basis of formation of new species?

(A) Genetic diversity

(B) Different species

(C) Diversity of population

(D) Community diversity

Ans. (A) Genetic diversity

[Page 143]

68) Which endangered species is found in vandsa National Park?

(A) painted frog

(B) black buck

(C) lesser-florican

(D) safed musli

Ans. (A) Painted frog

[Page 148]

69) Which is the diversity for the forest's biodiversity?

(A)  $\alpha$  diversity

(B)  $\beta$  diversity

(C)  $\gamma$  diversity

(D) All above

Ans. (C)  $\gamma$  diversity

[Page 144]

70) For which crop Amazon forest is being cleared?

(A) habanera

(B) maize

(C) bignonia

(D) soyabean

Ans. (D) Soyabean

[Page 150]

71) Biodiversity conservation means\_\_\_\_\_.

(A) The conservation of gene complexes

(B) The conservation of species

(C) The conservation of ecosystems

(D) The conservation of all above

Ans. (D) The conservation of all above

[Page 151]

72) Which Alien species introduced for aquaculture purposes?

- (A) Clarias gariepinus
- (B) Gandhari
- (C) Eicchornia
- (D) Safed musli

Ans. (A) Clarias gariepinus

[Page 151]

73) What is called the area in which they have rich plant and animal species and of which many are endemic and endangered?

- (A) buffer zone
- (B) rich area
- (C) hot spots
- (D) local area

Ans. (C) Hot spots

[Page 152]

74) Which is the correct equation for photo synthesis demonstrated by Hill?

- (A)  $2\text{H}_2\text{O} + \text{CO}_2 \xrightarrow{\text{light}} \text{H}_2\text{O} + \text{CH}_2\text{O} + 6\text{O}_2$
- (B)  $6\text{CO}_2 + 2\text{H}_2\text{O} \xrightarrow{\text{light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O} + 6\text{O}_2$
- (C)  $6\text{CO}_2 + 6\text{H}_2\text{O} \xrightarrow{\text{light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O} + 6\text{O}_2$
- (D)  $\text{CO}_2 + \text{H}_2\text{O} \xrightarrow{\text{light}} \text{CH}_2\text{O} + \text{O}_2$

Ans. (B)  $6\text{CO}_2 + 2\text{H}_2\text{O} \xrightarrow{\text{light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O} + 6\text{O}_2$

[Page 29]

75) When photo synthesis occurs in  $\text{C}_4$  plants?

- (A) low  $\text{CO}_2$  concentration
- (B) low light intensity
- (C) A and B both
- (D) only high intensity of light and more  $\text{CO}_2$  concentration.

Ans. (C) A and B both

[Page ]

76) 'Law of limiting factors for biochemical reaction was proposed by :

- (A) Ingen housz
- (B) Priestley
- (C) Calvin
- (D) Blackman

Ans. (D) Blackman

[Page 37]

77) Match the pair and choose the correct option.

- |  |                           |
|--|---------------------------|
| (A)                                    | (B)                       |
| X - Carboxylation                      | (1) $\text{O}_2$ produced |
| Y - Phosphorelation                    | (2) Photorespiration      |
| Z - Photolysis of $\text{H}_2\text{O}$ | (3) RuBisco               |
| W - Phosphoglycolate                   | (4) ATP                   |
| (A) (X - 3) (Y - 2) (Z - 1) (W - 4)    |                           |

(B) (X - 4) (Y - 2) (Z - 3) (W - 1)

(C) (X - 3) (Y - 4) (Z - 1) (W - 2)

(D) (X - 4) (Y - 3) (Z - 2) (W - 1)

Ans. (C) (X - 3) (Y - 4) (Z - 1) (W - 2)

**[Page 37]**

78) Which human activities are responsible for soil erosion and desert formation?

(A) Uncontrolled grazing

(B) Over cultivation

(C) Deforestation and poor irrigation

(D) All of the above

Ans. (D) All of the above

**[Page 167]**

79) Which steps can be taken to control global warming?

(A) Reduction in the consumption of fossil fuel

(B) Use of natural gases as an alternative source

(C) Reduction in deforestation

(D) All the above

Ans. (D) All the above

**[Page 166]**

80) The thickness of the ozone layer from the ground to the top of the atmosphere is measured in which unit?

(A) Pound

(B) Dobson

(C) Decibel

(D) Kilometer

Ans. (B) Dobson

**[Page 166]**

81) From April 1, 2005 BHARAT-III has been implemented in which cities?

(A) Mumbai, Chennai, Vadodara, Surat

(B) Delhi, Chennai, Ahmedabad, Bhavnagar

(C) Delhi, Mumbai, Chennai, Ahmedabad, Surat

(D) Delhi, Mumbai, Chennai, Vadodara, Surat

Ans. (C) Delhi, Mumbai, Chennai, Ahmedabad, Surat

**[Page 161]**82) Statement A : Substances which are harmful to organisms of biosphere are called pollutants  
Statement R : In order to control environmental pollution the Government of India has passed the Environment act in 1986

(A) Statement A is false R is correct

(B) Statement A and R both are correct, but R not explains A

(C) Statement A is correct R is false

(D) Statement A and R both are correct, R explains A

Ans. (B) Statement A and R both are correct, but R not explains A

**[Page 159]**

83) Match the following columns choose the correct option.

Column -I		Column - II		Column-III	
(P)	Garhwal	(i)	Amrita Devi	(x)	Organic Farming

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(q)	Jodhpur	(ii)	Sunderlal Bahuguna	(y)	Chipko movement
(r)	Haiyana	(iii)	Ramesh Dagar	(z)	Bishnois

(A) (p - i - x) (q - iii - z) (r - ii - y)

(B) (p - i - x) (q - ii - y) (r - iii - z)

(C) (p - ii - y) (q - i - z) (r - iii - x)

(D) (p - ii - y) (q - iii - x) (r - i - z)

Ans. (C) (p - ii - y) (q - i - z) (r - iii - x)

[Page 168-169]

84) The result of ozone depletion in stratosphere \_\_\_\_\_.

(A) Increase in skin cancer

(B) Forest firing

(C) Global warming

(D) B and C both

Ans. (A) Increase in skin cancer

[Page 167]

85) Statement X: Each rib is a thin flat bone connected dorsally to the vertebral column and ventrally to the sternum

Statement Y: The ribs have two articulation surfaces on its dorsal and ventral ends and is hence called bicephalic

Statement Z: 11 pairs of ribs are present

(A) X and Z are false Y is true; Y is not the reasoning for X

(B) X, Y and Z all three are true

(C) X and Z are true Y is false; Y is the reasoning for X

(D) X and Y are true Z is false; Y is the reasoning for X

Ans. (D) X and Y are true Z is false; Y is the reasoning for X

[Page 107]

86) Give the location and numbers of cervical vertebrae.

(A) Lumbar region, No - 5

(B) Cervical region, No - 7

(C) Lumbar region, No - 12

(D) Thoracic region, No - 7

Ans. (B) Cervical region, No - 7

[Page 106]

87) A bone present at the base of buccal cavity is called \_\_\_\_\_.

(A) Mandible

(B) Inferior nasal conchae

(C) Hyoid

(D) A and B both

Ans. (C) Hyoid

[Page 105]

88) Ciliary movement is observed in \_\_\_\_\_.

(A) Trachea

(B) Oviduct

(C) Vasa efferentia

(D) All the above

Ans. (D) All the above

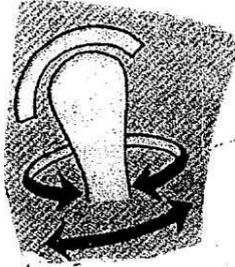
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89) Which type of joint is observed in the given diagram



- (A) Gliding joint
- (B) Ball and Socket joint
- (C) Pivot joint
- (D) Hinge joint

Ans. (B) Ball and Socket joint

[Page 108]

90) Which muscles activities are under the voluntary control of nervous system?

- (A) Skeletal muscles
- (B) Visceral muscles
- (C) Cardiac muscle
- (D) B and C both

Ans. (A) Skeletal muscles

[Page 101]

91) Which line is present in the centre of 'H' zone?

- (A) Hensen's line
- (B) M-line
- (C) Z-disc
- (D) Membrane of Krause

Ans. (B) M-line

[Page 102]

92) Which is not correct for Krebs cycle?

- (A) Biosynthetic reaction
- (B) It provides the main pathway for synthesis of ATP
- (C) Provides necessary components for growth and maintenance of cell
- (D) It provides a pathway for complete breakdown of glucose

Ans. (A) Biosynthetic reaction

[Page 46]

93) How many molecules of ATP are synthesized from 6 PGAL molecules in the last phase of aerobic respiration?

- (A) 180 ATP
- (B) 120 ATP
- (C) 240 ATP
- (D) 160 ATP

Ans. (C) 120 ATP (in last phase max 108 ATP are formed; 120 from full respiration.  $20 \times 6$  ATP)

[Page ]

94) How many ETS cycles are completed during aerobic respiration of 6 glucose molecules?

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- (A) 76 ETS cycles
- (B) 72 ETS cycles
- (C) 12 ETS cycles
- (D) 60 ETS cycles

Ans. (B) 72 ETS cycles

[Page 46]

95) How many substrate base ATP are formed during aerobic respiration of one sucrose molecule?

- (A) 6 ATP
- (B) 8 ATP
- (C) 4 ATP
- (D) 12 ATP

Ans. (B) 8 ATP (acc to GSEB text book 8 ATP but net gain is not asked so answer canbe 12ATP too)

[Page 49]

96) The enzyme required for the reaction, formation of acetaldehyde from pyruvic acid.

- (A) pyruvic acid decarboxylase
- (B) decarboxylase and thiamine pyrophosphate
- (C) alcohol dehydrogenase
- (D) hexo kinase

Ans. (B) decarboxylase and thiamine pyrophosphate

[Page 44]

97) Glyoxylate + H<sub>2</sub>O<sub>2</sub> and Hydroxy pyruvate are present in which organelle?

- (A) Vacuole
- (B) Peroxisome
- (C) Mitochondria
- (D) Chloroplast

Ans. (B) Peroxisome

[Page 36]

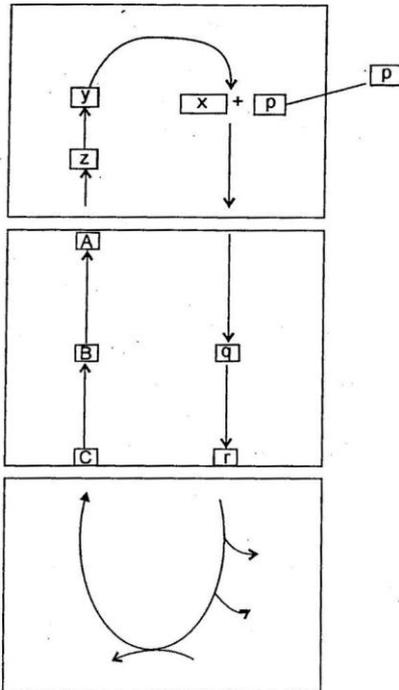
98) How many ATP and NADPH molecules are required for the fixation of molecules?

- (A) 80 ATP - 60 NADPH
- (B) 40 ATP - 45 NADPH
- (C) 90 ATP - 60 NADPH
- (D) 30 ATP - 24 NADPH

Ans. (C) 90ATP – 60 NADPH

[Page 34]

99) 'p' labelled in the given figure is used in which reaction?



- (A) Dark reaction
- (B) Light reaction
- (C) Respiration
- (D) All the above

Ans. (A) Dark reaction

[Page 36]

100) Where is ATP synthesized?

- (A) Mitochondrial D.N.A
- (B) On  $F_1$  particle
- (C) Mitochondrial matrix
- (D) Outer membrane of mitochondria

Ans. (B) On  $F_1$  particle

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