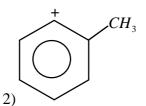
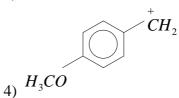
#### 82. The most stable carbocation is

$$C^{\dagger}H - CH_{3}$$



$$C H_2 - C H_2$$



83.  $CaC_2 + 2H_2O \rightarrow X$ 

$$CH_3 - CH_2 - Cl \xrightarrow{alc \, KOH} Y$$

$$X \xrightarrow{Z} Y$$

In this reaction the reagent 'Z' is

- 1)  $Con H_2 SO_4$
- 2) LiAlH<sub>4</sub>
- 3) Pd+BaSO<sub>4</sub>
- 4) (Zn-Hg)+ ConHCl

 $C_2H_6 \xrightarrow{\text{(CH}_3COO)_2Mn} X \xrightarrow{PCl_5} Y \xrightarrow{C_6H_6} Z$ . Identify X,Y,Z. 84.

1)  $CO_2$ , COCl,  $C_6H_5COCl$ 

- 2) CH<sub>3</sub>CHO, CH<sub>3</sub>CH<sub>2</sub>Cl, C<sub>6</sub>H<sub>5</sub>CH<sub>2</sub>COCl
- 3) CH<sub>3</sub>COOH, CH<sub>3</sub>COCl, C<sub>6</sub>H<sub>5</sub>COCH<sub>3</sub>
- 4) HCOOH, HCOCl, C<sub>6</sub>H<sub>5</sub>CHO

In PO<sub>4</sub><sup>-3</sup> ion the formal charge on each oxygen atom and P-O bond order respectively are 85.

- 1) -0.75, 1.25
- 2) -3, 1.25
- 3) -0.75, 1
- 4) -0.75, 0.6

**86.** The statements regarding hydrides of VI-A group elements are

- i) The order of volatility H<sub>2</sub>O<H<sub>2</sub>Te<H<sub>2</sub>Se<H<sub>2</sub>S
- ii) The order of boiling point H<sub>2</sub>O>H<sub>2</sub>Te>H<sub>2</sub>Se>H<sub>2</sub>S
- iii) The order of bond angles H<sub>2</sub>O>H<sub>2</sub>S>H<sub>2</sub>Se>H<sub>2</sub>Te

The correct combination is

1) Only (i) is correct

2) (ii) and (iii) are correct

3) (i) and (iii) are correct

4) All are correct

The halogen having greenish yellow gas reacts with hot and concentrated NaOH solution and **87.** give products. The oxidation state of that halogen changes from

- 1) 0 to -1
- 2) 0 to +5
- 3) -1 to +1
- 4) 0 to -1 and +5 states

The distribution of electrons in metal ion in  $\lceil Mn(H_2O)_6 \rceil^{2+}$  in splitted d- orbitals is 88.

- 2)  $t^{3}_{2g} eg^{2}$

**89.** Number of  $\sigma$  bonds present in meta borate ion and borazole are

- 1) 14, 15
- 2) 14, 12
- 3) 18, 12

Name of structure of silicate in which three oxygen atoms of  $\left[SiO_4\right]^{4-}$  are shared is 90.

1) Pyro silicate

2) Sheet silicate

3) Linear chain silicate

4) Three dimensional silicate

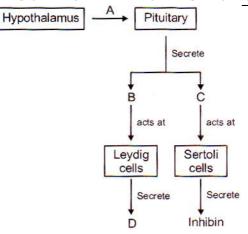
#### **BIOLOGY**

One of the following serve as quick referral systems in taxonomical studies. 91.

- 2) Manuals
- 3) Herbaria
- 4) Monographs

92. Study the flow chart. Name the hormones labeled as A, B, C, D at each stage **Choose the correct option** 

#### SRIGAYATRI EDUCATIONAL INSTITUTIONS - AP&TS



| $\mathbf{A}$     | В    | C        | D            |
|------------------|------|----------|--------------|
| 1) Gn-RH         | ICSH | Androgen | FSH          |
| 2) Gn-RH         | LH   | FSH      | Androgens    |
| 3) Gonadotropins | LH   | FSH      | Testosterone |
| 4) Gn-RH         | FSH  | LH       | Androgens    |

- 93. Conidia are
  - 1) Exogenous, asexual spores

2) Endogenous, asexual spores

3) Exogenous, sexual spores

- 4) Endogenous, sexual spores
- 94. Identify the hormones that are secreted in large amount prior to ovulation.
  - A. LH
- B. FSH
- C. Estrogen
- **D. Progesterone**

- 1) A only
- 2) A and B only
- 3) A, B and C only
- 4) A, B, C and D

- 95. Identify the wrong sentence
  - 1) Ovules are ategmic in gymnosperms
- 2)  $N_2$  fixing coralloid roots are found in Cycas
- 3) Mycorrhizal roots are seen inPinus
- 4) Endosperm is triploid in angiosperms
- 96. A sexually transmitted disease that can be treated with antibiotics is
  - 1) Genital warts
- 2) Hepatitis B
- 3) Syphilis
- 4) Trichomoniasis

97. Match the following

#### Set-I

#### Set-II

- A. Stem tendril
- 1. Watermelon
- B. Leaf tendril
- 2. Opuntia
- C. Phylloclade
- 3. Acacia melanoxylon
- D. Phyllode
- 4. Pea
- 1) A-1, B-2, C-3, D-4
- 2) A-1, B-4, C-2, D-3 3) A-2, B-4, C-3, D-1
- 4) A-4, B-1, C-2, D-3
- 98. Lactationalamenorrhoea is a natural way of birth spacing. It is due to the high level of
  - 1) FSH and LH hormones

2) Estrogen

3) Prolactin

- 4) Progesterone
- 99. Ovary is half- superior in
  - a) Mustard
- b) Peach
- c) Cucumber
- d) Rose

- e) Brinjal f) Plum
  - 1) b, d and e
- 2) a, b and f
- 3) b, d and f
- 4) b, c and f
- 100. Which of the following method is employed to assist the couple where there are problems with the sperms such as decrease in sperm count?
  - A. ZIFT
- **B. GIFT**
- C. ICSI
- D. AI

- 1) A and B only
- 2) C and D only
- 3) C only
- 4) D only
- 101. Ebroyophytic, tracheoptytic, archegoniate, cryptogams are
  - 1) Spermatophytes
- 2) Gymnosperms
- 3) Angiosperms
- 4) Pteridophytes

## SRIGAYATRI EDUCATIONAL INSTITUTIONS - AP&TS

| 102. | Which of the following are present in the muscles that exhibit high intensity contractions? |                                      |  |                                      |  |  |  |  |  |  |  |  |  |
|------|---|--------------------------------------|--|--------------------------------------|--|--|--|--|--|--|--|--|--|
|      | A. High myoglobin co  | ontent                               |  |                                      |  |  |  |  |  |  |  |  |  |
|      | B. Low myoglobin co   | B. Low myoglobin content             |  |                                      |  |  |  |  |  |  |  |  |  |
|      | C. Plenty of mitochondria   |                                      |  |                                      |  |  |  |  |  |  |  |  |  |
|      | D. A few mitochondr   |                                      |  |                                      |  |  |  |  |  |  |  |  |  |
|      | E. More amount of sa  | arcoplasmic reticulum                |  |                                      |  |  |  |  |  |  |  |  |  |
|      | F. Less amount of sai   | •                                    |  |                                      |  |  |  |  |  |  |  |  |  |
|      | 1) A, C and E   | 2) B, D and F                        | 3) A, C and F  | 4) B, D and E                        |  |  |  |  |  |  |  |  |  |
| 103. |   | found in unilocular ova              |  | 1) 2, 2 unu 2                        |  |  |  |  |  |  |  |  |  |
| 100. | 1) Parietal   | 2) Basal                             | 3) Marginal  | 4) Axile                             |  |  |  |  |  |  |  |  |  |
|      | 1) I arictar  | 2) Dasai                             | 3) Warginar  | 4) Axiic                             |  |  |  |  |  |  |  |  |  |
| 104  | Arrange the following   | g events of 'cross bridge            | cycle' in an order                                   |                                      |  |  |  |  |  |  |  |  |  |
| 10   | A. Power stroke   | g events of cross bridge             | cy cic iii uii oi uci                                |                                      |  |  |  |  |  |  |  |  |  |
|      | B. Another ATP bind   | ls to myosin head                    |  |                                      |  |  |  |  |  |  |  |  |  |
|      | C. P <sub>I</sub> released  | is to my osim mean                   |  |                                      |  |  |  |  |  |  |  |  |  |
|      | =   | s to active site and cross           | hridge formed  |                                      |  |  |  |  |  |  |  |  |  |
|      | •   | om hydrolysis of ATP in              | O  |                                      |  |  |  |  |  |  |  |  |  |
|      | F. ADP released   |                                      | ii iiiyosiii iicaa                                   |                                      |  |  |  |  |  |  |  |  |  |
|      | G. Myosin head relea  | ses active site                      |  |                                      |  |  |  |  |  |  |  |  |  |
|      | 1) D, E, A, F, B, C, G  | ises active site                     | 2) E, D, F, A, C, B,                                 | G                                    |  |  |  |  |  |  |  |  |  |
|      | 3) B, D, E, F, A, C, G  |                                      | 4) E, D, C, A, F, B,                                 |                                      |  |  |  |  |  |  |  |  |  |
| 105  |   | the xylem and dead con               | , , , , , , , ,                                      |                                      |  |  |  |  |  |  |  |  |  |
| 105. | 1) Xylem fibres and pl  | •                                    | -  | na and phloem fibres                 |  |  |  |  |  |  |  |  |  |
|      | 3) Tracheidsand phloe   | •                                    | 4) Xylem parenchyn                                   | •                                    |  |  |  |  |  |  |  |  |  |
| 106. | · ·   |                                      | •  | es that are originated from          |  |  |  |  |  |  |  |  |  |
| 200. | ectoderm?   | ing cranial nerves in                | iner value the magen                                 | os viint ure originateu rron         |  |  |  |  |  |  |  |  |  |
|      | 1) Optic  | 2) Pathetic                          | 3) Occulomotor                                       | 4) Abducens                          |  |  |  |  |  |  |  |  |  |
| 107. |   | conjoint, open with end              | ,  | ,                                    |  |  |  |  |  |  |  |  |  |
|      | 1) Dicot stem   | 2) Dicot root                        | 3) Monocot stem                                      | 4) Monocot root                      |  |  |  |  |  |  |  |  |  |
| 108. | Which of the following  | *                                    |  | gainst concentration gradient        |  |  |  |  |  |  |  |  |  |
|      | into the cells of villi?  |                                      |  |                                      |  |  |  |  |  |  |  |  |  |
|      | 1) Glucose, amino acio  | ds                                   | 2) Fructose, amino a                                 | ncids                                |  |  |  |  |  |  |  |  |  |
|      | 3) Amino acids  |                                      | 4) Water   |                                      |  |  |  |  |  |  |  |  |  |
| 109  | · ·   | of stages in cell cycle is           | ,  |                                      |  |  |  |  |  |  |  |  |  |
| 10). | 1) G <sub>1</sub> G <sub>2</sub> S M  | 2) G <sub>1</sub> S G <sub>2</sub> M | 3) G <sub>1</sub> G <sub>2</sub> M S                 | 4) G <sub>1</sub> S M G <sub>2</sub> |  |  |  |  |  |  |  |  |  |
| 110. | Match the following   | 2) 01 5 02 111                       | <i>5)</i> 6 <sub>1</sub> 6 <sub>2</sub> 111 <i>5</i> | 1) 31 3 11 32                        |  |  |  |  |  |  |  |  |  |
| ,    | List – A  |                                      | List – B   |                                      |  |  |  |  |  |  |  |  |  |
|      | A. Cricoid cartilage  |                                      | i) Smallest cartilage                                | es                                   |  |  |  |  |  |  |  |  |  |
|      | <b>B.</b> Thyroid cartilage   |                                      | ii) Paired cartilages                                |                                      |  |  |  |  |  |  |  |  |  |
|      | C. Corniculate cartila  | ages                                 | iii) ventral and late                                | eral walls of larynx                 |  |  |  |  |  |  |  |  |  |
|      | D. Cuneiform cartila  | ges                                  | iv) Largest cartilag                                 | ge                                   |  |  |  |  |  |  |  |  |  |
|      |   |                                      | v) Lower and poste                                   | erior part of wall of larynx         |  |  |  |  |  |  |  |  |  |
|      | 1) A-i, B-iv, C-ii, D-v   |                                      | 2) A-v, B-iii, C-ii, D-i                             |                                      |  |  |  |  |  |  |  |  |  |
|      | 3) A-v, B-iv, C-i, D-iii  |                                      | 4) A-v, B-iii, C-i, D-                               |                                      |  |  |  |  |  |  |  |  |  |
| 111. | _   | g in decreasing order ba             | sed on the number o                                  | of layers present around             |  |  |  |  |  |  |  |  |  |
|      | them  |                                      |  |                                      |  |  |  |  |  |  |  |  |  |
|      | I) Ribosome   |                                      |  |                                      |  |  |  |  |  |  |  |  |  |
|      | II) Vacuole   |                                      |  |                                      |  |  |  |  |  |  |  |  |  |
|      | III) Mitochondrion  | 4                                    |  |                                      |  |  |  |  |  |  |  |  |  |
|      | IV) Endospore of bac  |                                      | 2) 17/111 11 1                                       | 4) IV/ III I II                      |  |  |  |  |  |  |  |  |  |
|      | 1) I II III IV  | 2) II I III IV                       | 3) IV III II I                                       | 4) IV III I II                       |  |  |  |  |  |  |  |  |  |

| 112. | 2. Statement 1 : Emphysema is a disorder in which alveolar walls are damaged. |                                       |  |   |  |  |  |  |  |  |  |
|------|---|---------------------------------------|--|---|--|--|--|--|--|--|--|
|      | Statement 2 : The lu  | ings show smaller b                   | ut fewer alveoli and mo  | wer alveoli and more fibrous and less elastic |  |  |  |  |  |  |  |
|      | 1) Both the statement   | s are true                            | 2) Both the statem   | ents are false                                |  |  |  |  |  |  |  |
|      | 3) Statement 1 is true  | ;                                     | 4) Statement 2 is to   |   |  |  |  |  |  |  |  |
| 113. | Arrange the following   | ng series descending                  | ly based on the number   |   |  |  |  |  |  |  |  |
|      | I) Heteromerae  | II) Bicarpellatae                     | •  | *   |  |  |  |  |  |  |  |
|      | 1) I II IV III  | 2) III IV II I                        | 3) III IV I II   | 4) ÎV IIÎ II I                                |  |  |  |  |  |  |  |
| 114. | <b>Functional Residual</b>  | capacity =                            | ,  | ,   |  |  |  |  |  |  |  |
|      | 1) $TV + IRV + ERV$   |                                       | 2) VC + RV   |   |  |  |  |  |  |  |  |
|      | 3) ERV + RV   |                                       | 4) TV + IRV  |   |  |  |  |  |  |  |  |
| 115. | Identify the wrong p  | oair regarding secon                  | dary metabolites   |   |  |  |  |  |  |  |  |
|      | 1) Alkaloid-Codeine   |                                       | 2) Toxin-Ricin   |   |  |  |  |  |  |  |  |
|      | 3) Lectin-Concanava   | lin A                                 | 4) Drug-Abrin  |   |  |  |  |  |  |  |  |
| 116. | Flat T – wave in EC   | G indicates.                          |  |   |  |  |  |  |  |  |  |
|      | 1) Hyperkalemia   |                                       | 3) Hypercalcemia   | 4) Hypocalcemia                               |  |  |  |  |  |  |  |
| 117. |   |                                       |  | er of hydrogen bonds existed                  |  |  |  |  |  |  |  |
|      | in that DNA is  | 10118011 001181808 01 1               | - , o 1 - <del>0</del> - 0 - 1 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 | 01 01 11, 01 0 <b>9</b> 011 × 01100 0111×00 0 |  |  |  |  |  |  |  |
|      | 1) 125  | 2) 135                                | 3) 130   | 4) 140  |  |  |  |  |  |  |  |
| 118. | Which of the followi  | ,                                     | ,  | ,   |  |  |  |  |  |  |  |
|      |   | O                                     |  | ending limb of vasa recta                     |  |  |  |  |  |  |  |
|      | O   |                                       | ·  | ing and ascending limbs of vasa               |  |  |  |  |  |  |  |
|      | recta   | 2 <u>F</u>                            |  | <b>6</b>                                      |  |  |  |  |  |  |  |
|      | C. K <sup>+</sup> ion reabsorpti  | on takes place throu                  | gh proximal convoluted   | tubule.                                       |  |  |  |  |  |  |  |
|      | D. ANF inhibits the   | _                                     | ~ <u>-</u>   |   |  |  |  |  |  |  |  |
|      | 1) A, C, D  | 2) B, C, D                            | 3) C, D  | 4) BD   |  |  |  |  |  |  |  |
| 119. | Arginosuccinase enz   |                                       | , ,  | ,   |  |  |  |  |  |  |  |
|      | 1) Hydrolases   | 2) Lyases                             | 3) Ligases   | 4) Transferases                               |  |  |  |  |  |  |  |
| 120. | Necrosis of cardiac   | , •                                   | , •  | ,   |  |  |  |  |  |  |  |
|      | 1) Heart failure  | 2) Heart attack                       | 3) Chest pain  | 4) Ischemia                                   |  |  |  |  |  |  |  |
| 121. | The correct sequence  | ,                                     | , <u>*</u>   | ,   |  |  |  |  |  |  |  |
|      | I) Synapsis   |                                       | II) Crossing over  |   |  |  |  |  |  |  |  |
|      | III) Terminalisation  | <u> </u>                              | ,  | IV) Segregation of chromosomes                |  |  |  |  |  |  |  |
|      | 1) I II IV III  | 2) I III II IV                        | 3) I II III IV   | 4) II I III IV                                |  |  |  |  |  |  |  |
| 122. | Which of the follow   | · · · · · · · · · · · · · · · · · · · | ,  | ,   |  |  |  |  |  |  |  |
|      |   | O                                     |  | on curve indicates that the                   |  |  |  |  |  |  |  |
|      | haemoglobin has an  | • •                                   | C  |   |  |  |  |  |  |  |  |
|      | 0   | •                                     | • 0  | ve is the range that exists at the            |  |  |  |  |  |  |  |
|      | pulmonary capillari   |                                       | 0  | 8   |  |  |  |  |  |  |  |
|      |   |                                       | ge that exists at the syste                                    | emic capillaries                              |  |  |  |  |  |  |  |
|      | D. In a resting perso   | on $[pO_2 = 40 \text{ mm Hg}]$        | g], haemoglobin always o                                       | carries about 75% oxygen.                     |  |  |  |  |  |  |  |
|      | 1) ABC  | 2) BCD                                | 3) AD  | 4) ABCD                                       |  |  |  |  |  |  |  |
| 123. | Match the following   | ,<br>                                 |  |   |  |  |  |  |  |  |  |
|      | Set-I   | Set-II                                |  |   |  |  |  |  |  |  |  |
|      | A. Bryophyllum  | I. Offset                             |  |   |  |  |  |  |  |  |  |
|      | B. Agave  | II. Rhizor                            | ne   |   |  |  |  |  |  |  |  |
|      | C. Water hyacinth   | III. Bulbil                           |  |   |  |  |  |  |  |  |  |
|      | D. Ginger   | IV. Leaf b                            | ouds   |   |  |  |  |  |  |  |  |
|      | 1) A-I, B-II, C-III, D  | -IV                                   | 2) A-IV, B-III, C-l  | I, D-II                                       |  |  |  |  |  |  |  |
|      | 3) A-IV, B-III, C-II, 1   |                                       | 4) A-III, B-IV, C-1  |   |  |  |  |  |  |  |  |
| 124. |   |                                       | l girdle and pelvic girdl                                      | e respectively?                               |  |  |  |  |  |  |  |
|      | 1) 4, 6   | 2) 6, 6                               | 3) 4, 2  | 4) 5, 6                                       |  |  |  |  |  |  |  |

| 125. | If leaf cell of onion consists of 16 chromosomes, how many chromosomes are present in the |
|------|---|
|      | endosperm cell of onion?  |

1)8

2) 16

3) 24

4) 48

# 126. What is the name of the region of the brain that is responsible for the functions like breathing, heart beat and blood pressure?

1) Amygdala

2) Brain stem

3) Cerebrum

4) Both 1 and 2

### 127. Identify the correct sentence

- 1) Xenogamy occurs in dioecious plants only
- 2) In the plant with bisexual flowers autogamy only occurs
- 3) Autogamy occurs in bisexual flowers only
- 4) Either autogamy or geitonogamy occurs in dioecious plants

### 128. Match the following

| List - A                                   | List – B                              |  |  |  |  |  |  |
|--|---------------------------------------|--|--|--|--|--|--|
| A. Most convincing evidence in favour of   | i. Atavistic organs                   |  |  |  |  |  |  |
| organic evolution.                         |                                       |  |  |  |  |  |  |
| B. Strongly support the concept on organic | ii. Evidences from cell and molecular |  |  |  |  |  |  |
| evolution.                                 | biology.                              |  |  |  |  |  |  |
| C. Clearly explain the path of evolution.  | iii. Vestigial organs                 |  |  |  |  |  |  |
| D. The most detailed and convincing        | g iv. Connecting links                |  |  |  |  |  |  |
| evidence in favour of biological evolution |                                       |  |  |  |  |  |  |

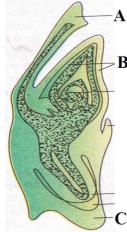
1) 
$$A - iii$$
,  $B - iv$ ,  $C - i$ ,  $D - ii$ 

2) 
$$A - i$$
,  $B - iii$ ,  $C - iv$ ,  $D - ii$ 

3) 
$$A - ii$$
,  $B - i$ ,  $C - iii$ ,  $D - iv$ 

4) 
$$A - iii$$
,  $B - i$ ,  $C - iv$ ,  $D - ii$ 

## 129. Observe the following diagram and identify A, B and C in the figure respectively



- 1) Coleoptile, Epiblast, Coleorhiza
- 2) Coleoptile, Shoot apex, Coleoptile
- 3) Coleorhiza, Epiblast, Coleoptile
- 4) Scutellum, Coleoptile, Coleorhiza

#### 130. The dynamic nature of species was proposed by

- 1) Author of "The Origin of Species"
- 2) Author of "Natural History"
- 3) Author of "SystemaNaturae"
- 4) Author of "HistoriaGeneralisPlantarum"

#### 131. Production of seeds without fertilization is called

- 1) Polyembryony
- 2) Apomixis
- 3) Parthenocarpy
- 4) Amphimixis

## 132. In the analysis of species area relationship among tropical rain forest, if the slope is more than 45° the value of 'Z' is

1) 0.6

2) 1

3) 1.2

4) 1.7

#### 133. Pioneers in xerarch and hydrarch successions respectively are

1) Bryophytes and Lichens

2) Lichens and Phytoplanktons

3) Lichens and bryophytes

4) Lichens and submerged plants

#### 134. In which of the following organisms "blind sac plan" was first formed?

- 1) Cnidarians
- 2) Flat worms
- 3) Nematodes
- 4) Chordates

## 135. Drought evaders or escapers are

- 1) Ephemerals
- 2) True xerophytes
- 3) Non-succulents
- 4) Succulents

| 136.        | Primary induction car  | n not be found in  |   |                                  |  |  |  |  |  |  |  |
|-------------|--|--|---|----------------------------------|--|--|--|--|--|--|--|
|             | 1) Pseudocoelomates  | 2) Schizocoelomates  | 3) Eucoelomates                                 | 4) Human beings                  |  |  |  |  |  |  |  |
| <b>137.</b> | In pteris, each sorus is   | s protected by the refle   | xed margin of the fertile                       | e leaflet called                 |  |  |  |  |  |  |  |
|             | 1) Ramenta   | 2) Indusium  | 3) False indusium                               | 4) fronds                        |  |  |  |  |  |  |  |
| <b>138.</b> | Epididymis is lined wi   | ith  |   |                                  |  |  |  |  |  |  |  |
|             | 1) Stratified cuboidal ep  | pithelium  | 2) Pseudostratified cilia                       | ted epithelium                   |  |  |  |  |  |  |  |
|             | 3) Pseudostratified non  | ciliated epithelium  | 4) Ciliated columnar ep                         | ithelium                         |  |  |  |  |  |  |  |
| 139.        | 9. Arrange the following in ascending order based on their imbibing capacities |  |   |                                  |  |  |  |  |  |  |  |
|             | a) Wheat grains  | b) Cotton fibres   | c) Pea seeds                                    |                                  |  |  |  |  |  |  |  |
|             | 1) b, a, c   | 2) c, a, b   | 3) a, b, c                                      | 4) c, b,a                        |  |  |  |  |  |  |  |
| 140.        | Which of the following statements is correct?                                  |  |   |                                  |  |  |  |  |  |  |  |
|             | 1) Histamine acts as va  | sodilator and bronchodil   | lator   |                                  |  |  |  |  |  |  |  |
|             | 2) Histamine and brady   | kinin act as vasoconstri   | ctors and bronchoconstric                       | etors                            |  |  |  |  |  |  |  |
|             | 3) Histamine acts as va  | sodilator and bronchoco  | nstrictor                                       |                                  |  |  |  |  |  |  |  |
|             | 4) Seratonin acts as vas   | soconstrictor and bronch   | oconstrictor                                    |                                  |  |  |  |  |  |  |  |
| 141.        | The ratio of e, H and  | l ATP required for con   | version of N <sub>2</sub> into 2NH <sub>3</sub> | is                               |  |  |  |  |  |  |  |
|             | 1)1:2:2  | 2) 1:1:1   | 3) 1:1:2  | 4) 2:1:2                         |  |  |  |  |  |  |  |
| 142.        | If 'the most abundant  | serum protein' level fa  | alls in blood plasma.                           |                                  |  |  |  |  |  |  |  |
|             | 1) Hydrostatic pressure  |  | ) Hydrostatic pressure dec                      |                                  |  |  |  |  |  |  |  |
|             | 3) Oncotic pressure dec  |  | ) Colloidal osmotic pressi                      | are increases                    |  |  |  |  |  |  |  |
| 143.        |  | ion occurs due to lack   | or low level of                                 |                                  |  |  |  |  |  |  |  |
|             | 1) N Zn Mo   | 2) N K S Mo  | 3) K N Zn Mo                                    | 4) Ca Mg K                       |  |  |  |  |  |  |  |
| 144.        | Match the following.   |  |   |                                  |  |  |  |  |  |  |  |
|             | List – A   | List – B   |   |                                  |  |  |  |  |  |  |  |
|             | A. Baosphils   | i. Large cytoplasmic   | _   |                                  |  |  |  |  |  |  |  |
|             | B. Acidophils  | ii. Peripheral cytopl  | asm   |                                  |  |  |  |  |  |  |  |
|             | C. Neutrophils   | iii. Phagocytes  | •   |                                  |  |  |  |  |  |  |  |
|             | D. Lymphocytes   | iv. Small cytoplasmi   | _   |                                  |  |  |  |  |  |  |  |
|             | E. Monocytes   | v. Irregular cytoplas  | smic granules                                   |                                  |  |  |  |  |  |  |  |
|             |  | <b>D E</b> iv iii  |   |                                  |  |  |  |  |  |  |  |
|             | ,  | iv iii<br>ii iii   |   |                                  |  |  |  |  |  |  |  |
|             | <i>'</i>   |  |   |                                  |  |  |  |  |  |  |  |
|             | ,  | iv ii<br>ii iii  |   |                                  |  |  |  |  |  |  |  |
|             | 4) v i iv  | 11 111   |   |                                  |  |  |  |  |  |  |  |
| 1 1 5       | If 2 almana malaamlaa  | and formed as not asim   | thuanah Caluin anala l                          |                                  |  |  |  |  |  |  |  |
| 145.        |  | e molecules are formed   | through Calvin cycle, h                         | iow many                         |  |  |  |  |  |  |  |
|             | 1) 2   | 2) 4   | 3) 6  | 4) 8                             |  |  |  |  |  |  |  |
| 146         |  | t higher altitudes gener   | *   | 4) 0                             |  |  |  |  |  |  |  |
| 140.        | 1) Polycythemia  | 2) Erythrocytopenia  | 3) Leucocytopenia                               | 4) Erythrocytosis                |  |  |  |  |  |  |  |
| 147         |  | photolysis of water are  | · • •   | +) Liyimocytosis                 |  |  |  |  |  |  |  |
| 17/.        | a) Ca <sup>2+</sup>  | b) Mn <sup>2+</sup>  | c) Cl   | <b>d</b> ) <b>K</b> <sup>+</sup> |  |  |  |  |  |  |  |
|             | 1) a and b only  | 2) b and c only  | 3) a, b and c                                   | 4) b, c and d                    |  |  |  |  |  |  |  |
| 148.        | Statocysts occur in  | 2) o and c omy   | 3) u, o una c                                   | i) b, c and a                    |  |  |  |  |  |  |  |
| 1 10.       | 1) Hydra   | 2) Adamsia   | 3) Rhizostoma                                   | 4) Physalia                      |  |  |  |  |  |  |  |
| 149         | . •  | <i>'</i>   | s that occur during glyco                       | •                                |  |  |  |  |  |  |  |
| 177.        | respectively is  | iever phosphory actions  | that occur during gives                         | nysis and krebs cycle            |  |  |  |  |  |  |  |
|             | 1) 1:1   | 2) 2:1   | 3) 1:2  | 4) 3:1                           |  |  |  |  |  |  |  |
| 150.        |  | -, <b>-</b>  | <i>5,</i> 1.2                                   | .,                               |  |  |  |  |  |  |  |
| 100         | _  | T  |   |                                  |  |  |  |  |  |  |  |
|             | List-A   | List-B   |   |                                  |  |  |  |  |  |  |  |
|             | List-A<br>A. Echinococcus  | List-B i) Syncytial epiderm  | is  |                                  |  |  |  |  |  |  |  |
|             | List-A A. Echinococcus B. Ancylostoma  | <ul><li>i) Syncytial epiderm</li><li>ii) Collagenous cutio</li></ul> |   |                                  |  |  |  |  |  |  |  |

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|      | D. Wuchereria                        | iv) Syncytial tegur                           | nent                   |                                     |
|------|--------------------------------------|---|------------------------|-------------------------------------|
|      | E. Bilharzia                         | v) Rhabdites                                  |                        |                                     |
|      | A B C                                | $\mathbf{D}  \mathbf{E}$                      |                        |                                     |
|      | 1) IV V I                            | II III  |                        |                                     |
|      | 2) IV I V                            | II III  |                        |                                     |
|      | 3) IV II III                         | I V   |                        |                                     |
|      | 4) V I III                           | II IV   |                        |                                     |
| 151. | Observe the figure an                | nd identify A, B and C                        | respectively           |                                     |
|      |                                      |   |                        |                                     |
|      |                                      |   |                        |                                     |
|      |                                      |   |                        |                                     |
|      |                                      |   |                        |                                     |
|      | B                                    |   |                        |                                     |
|      |                                      | L'  |                        |                                     |
|      | A_ 1:-                               |   |                        |                                     |
|      | 1) Importante also advis             | Languaga E E                                  | 2) Immon mito also m   | duial manchagas E E                 |
|      | 1) Inner mitochondria                |   |                        | drial membrane, $F_0$ , $F_1$       |
| 150  | 3) Mitochondrial matr                |   |                        | nce of mitochondrion, $F_0$ , $F_1$ |
| 152. |                                      | matchings of an anin<br>nea B. Scorpion – Boo |                        | espiratory organ                    |
|      | C. Sea squirt – Phary                | •   | D. Dolphin – gills     |                                     |
|      | The correct matching                 | -   | D. Dolpinii – gins     |                                     |
|      | 1) A and B                           | 2) A, B and C                                 | 3) B and D             | 4) C and D                          |
| 153  | Identify wrong states                |   | 5) D and D             | i) C and B                          |
| 100. | 1) NAA and 2,4-D are                 |   |                        |                                     |
|      |                                      | te bolting in Cabbages                        |                        |                                     |
|      | · •                                  | Eemale flowers in cucun                       | nbers                  |                                     |
|      |                                      | ent the abscission of ol                      |                        | l fruits                            |
| 154. |                                      | t matching of a class a                       |                        |                                     |
|      | 1) Chondrichthyes – a                | mphicoelous vertebrae                         |                        |                                     |
|      | 2) Amphibia – Sternur                | m ,columellauris                              |                        |                                     |
|      | 3) Reptilia – Sinus ver              | nosus, micro lecithal eg                      | gs                     |                                     |
|      | ,                                    | ephric kidneys, Uriotel                       |                        |                                     |
| 155. |                                      | bacteria play a great i                       | role in re cycling nut | trients like nitrogen,              |
|      | phosphorous, iron ar                 | _   | a\ ==                  |                                     |
|      | 1) Chemo-autotrophic                 |   | 2) Photo- autotrop     |                                     |
| 1=7  | 3) Photo-heterotrophic               |   | 4) Chemo- hetero       | trophic bacteria                    |
| 150. |                                      | tamoeba, karyokinesis                         |                        | D. Mada anadia ada aa               |
|      |                                      | B. Pre cystic stage                           | •                      | D. Metacystic stage                 |
| 157  | 1) A, B and C                        | 2) A, B and D                                 | 3) B, C and D          | 4) A, C and D                       |
| 157. | <b>Potato spindle tuber</b> 1) Prion | 2) Virion                                     | 3) Bacterium           | 4) Viroid                           |
| 158  | *                                    | nes secreted by <i>Entam</i>                  |                        | ,                                   |
| 150. | 1) Histolysins and lype              |   | 2) Proteolytic and c   |                                     |
|      | 3) Cytolytic and prote               |   | 4) Proteolytic and h   | , ,                                 |
| 159. |                                      |   | · ·                    | recombinants formed is              |
| 10), | 1) 25%                               | 2) 62.5%                                      | 3) 50%                 | 4) 37.5%                            |
| 160. | ,                                    | · · · · · · · · · · · · · · · · · · ·         | ,                      | s in the life cycle of malaria      |
|      | parasite                             |   | g,,                    |                                     |
|      | -                                    | netacryptozoite, erythro                      | ocyticmerozoite        |                                     |
|      |                                      | matacryptozoite, sporo                        | •                      |                                     |
|      |                                      | netacryptozoiteerythro                        |                        |                                     |
|      |                                      | netacryptozoite, erythro                      | •                      | nozoite                             |
|      |                                      |   |                        |                                     |

| 161      | The fraction of double homographes in the E.   |                       |                                      |  |  |  |  |  |  |  |  |  |
|----------|--|-----------------------|--------------------------------------|--|--|--|--|--|--|--|--|--|
| 101.     | The fraction of double homozygotes in the F <sub>2</sub> of Mendel's dihybrid cross is |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | 1) $\frac{1}{4}$ 2) $\frac{1}{8}$  | 3) $\frac{1}{16}$     | 4) $\frac{1}{2}$                     |  |  |  |  |  |  |  |  |  |
|          | <del>-</del> 0   |                       | <b>~</b>                             |  |  |  |  |  |  |  |  |  |
| 162.     | In cockroach due to the contraction of which   | muscles v             | wings are depressed and segments are |  |  |  |  |  |  |  |  |  |
|          | telescoped respectively.   |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | 1) Dorsoventral muscles, ventral longitudinal m  |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | 2) Dorsolongitudinal muscles, ventral longitudinal                                     | nal muscle            | es                                   |  |  |  |  |  |  |  |  |  |
|          | 3) Dorsoventral muscles  |                       |                                      |  |  |  |  |  |  |  |  |  |
| 1.0      | 4) Ventral longitudinal muscles, Dorsolongitudi  | nal muscl             | es                                   |  |  |  |  |  |  |  |  |  |
| 163.     | Match the following  |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | Set-I  | Set-II                |                                      |  |  |  |  |  |  |  |  |  |
|          | A. $\phi \times 174$ Bacteriophage   | 1. 6.6×1              | $0^9 bp$                             |  |  |  |  |  |  |  |  |  |
|          | B. Bacteriophage lambda  | 2. 4.6×1              | $0^6 bp$                             |  |  |  |  |  |  |  |  |  |
|          | C. E.coli  | 3. 48502              | •                                    |  |  |  |  |  |  |  |  |  |
|          | D. Diploid content of Human DNA  |                       | nucleotides                          |  |  |  |  |  |  |  |  |  |
|          | D. Diploid content of Human DNA  |                       |                                      |  |  |  |  |  |  |  |  |  |
|          |  | 5. 3.3×10             | •                                    |  |  |  |  |  |  |  |  |  |
|          | 1) A-4, B-3, C-1, D-5 2) A-4, B-3, C-1, D-4  |                       |                                      |  |  |  |  |  |  |  |  |  |
| 164.     | Which of the following activities occur in the   | •                     | 1 0                                  |  |  |  |  |  |  |  |  |  |
|          | · ·  | •                     | n and absorption                     |  |  |  |  |  |  |  |  |  |
| 1.6      | , <u>*</u>   | ) Reabsor             | ption                                |  |  |  |  |  |  |  |  |  |
| 165.     | AAA, AAG are the codons for  | 2) (7                 | 1) G :                               |  |  |  |  |  |  |  |  |  |
| 1//      | 1) Leucine 2) Lysine   | 3) Cystei             | ine 4) Serine                        |  |  |  |  |  |  |  |  |  |
| 166.     | Match the following  | T                     |                                      |  |  |  |  |  |  |  |  |  |
|          | List – I   | List -                |                                      |  |  |  |  |  |  |  |  |  |
|          | A. Stable population   | I.                    | Triangular shape                     |  |  |  |  |  |  |  |  |  |
|          | B. Declining population  | II.                   | Exponential growth curve             |  |  |  |  |  |  |  |  |  |
|          | C. Density dependent growth curve  | III.                  | Sigmoid growth curve                 |  |  |  |  |  |  |  |  |  |
|          | D. Density independent growth curve  | IV.                   | Urn shape                            |  |  |  |  |  |  |  |  |  |
|          | E. Growing population  | V.                    | Bell shape                           |  |  |  |  |  |  |  |  |  |
|          |  |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | A B C D E  |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | 1) V IV III II I   |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | 2) V IV II III I   |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | 3) IV V III II I   |                       |                                      |  |  |  |  |  |  |  |  |  |
| 4        | 4) IV III II III I   |                       |                                      |  |  |  |  |  |  |  |  |  |
| 167.     | Identify the correct statement   | ra •                  | DBR aga 1                            |  |  |  |  |  |  |  |  |  |
|          | 1) Ampicillin resistant gene is present at Bam H                                       |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | 2) Gene gun method is used to introduce alien I  | -                     | plant host cells                     |  |  |  |  |  |  |  |  |  |
|          | 3) Lysozyme is used to break the fungal cell wa  |                       | D.V.                                 |  |  |  |  |  |  |  |  |  |
| 4.60     | 4) Restriction endonuclease enzyme added meth  |                       |                                      |  |  |  |  |  |  |  |  |  |
| 168.     | Down's syndrome is caused by an extra copy   |                       |                                      |  |  |  |  |  |  |  |  |  |
|          | offspring produced by an affected mother an  | d a norm              | al father would be affected by this  |  |  |  |  |  |  |  |  |  |
|          | disorder?  | <b>a</b> > <b>z</b> a | 0.270                                |  |  |  |  |  |  |  |  |  |
| <b>.</b> | 1) 100% 2) 75%   | 3) 50%                | 4)25%                                |  |  |  |  |  |  |  |  |  |
| 169.     | Down stream processing includes  | • -                   |                                      |  |  |  |  |  |  |  |  |  |
|          | 1) Separation and purification   |                       | uration and purification             |  |  |  |  |  |  |  |  |  |
|          | 3) Annealing and purificartion   |                       | uration and separation               |  |  |  |  |  |  |  |  |  |
| 170.     | A male human is heterozygous for autosomal   | l genes 'A            | ' and 'B' and is also hemizygous for |  |  |  |  |  |  |  |  |  |
|          | hemophilic gene 'h'. What proportion of his  |                       |                                      |  |  |  |  |  |  |  |  |  |

1)1/8

3)1/16

4)1/4

2)1/32

| <b>171.</b> | Sel  | ect the                 | e wror       | ıg pai         | r       |              |              |                |  |              |         |                    |         |           |              |            |
|-------------|--|-------------------------|--------------|----------------|---------|--------------|--------------|----------------|--|--------------|---------|--------------------|---------|-----------|--------------|------------|
|             | 1) Round up ready soyabean – herbicide tolerant  |                         |              |                |         |              |              |                |  |              |         |                    |         |           |              |            |
|             |  |                         | _            | -              | -       |              |              | ophtho         |  |              |         |                    |         |           |              |            |
|             | ,  | Bt . Co                 |              |                |         |              | •            | •              |  |              |         |                    |         |           |              |            |
|             | ,  |                         |              |                |         |              |              | ng spot        | virus  |              |         |                    |         |           |              |            |
| 172         |  | tch th                  | -            | - •            |         |              |              | 8 - F          |  |              |         |                    |         |           |              |            |
| 1/4.        |  | rt – I                  | c ronc       | wing           |         |              |              |                | Pα   | rt – I       | T       |                    |         |           |              |            |
|             |  |                         | , a a a l v  |                |         |              |              |                |  |              |         | otion              | of CI   | I in cl   | .:1.4        |            |
|             |  | Acron                   |              |                |         |              |              |                |  |              |         | euon               | oi Gi   | 1 III CI  | ma           |            |
|             |  | Giaga                   |              |                |         |              |              |                |  | Oxy          |         | 4•                 | e 1     |           | 4 1          |            |
|             |  | Addis                   |              |                |         |              |              |                |  |              |         |                    | _       |           | rticoid      |            |
|             |  | Dwarf                   |              |                |         |              |              |                |  |              |         |                    |         | H in c    |              |            |
|             |  | Ejecti                  |              | milk           |         |              |              |                | -  |              |         |                    |         | in ad     |              |            |
|             | <b>F</b> ) (   | Cushi                   | ng's         |                |         |              |              |                | VI   | ) Hyp        | osecr   |                    | of Gl   |           | rticoid      |            |
|             |  | $\mathbf{A}$            | $\mathbf{B}$ | C              | D       | $\mathbf{E}$ | $\mathbf{F}$ |                |  | $\mathbf{A}$ | В       | C                  | D       | ${f E}$   | $\mathbf{F}$ |            |
|             | 1)   | V                       | IV           | VI             | I       | III          | II           |                | 2)   | V            | IV      | VI                 | I       | II        | III          |            |
|             | 3)   | V                       | IV           | VI             | II      | III          | I            |                | 4)   | V            | IV      | VI                 | II      | III       | I            |            |
| <b>173.</b> | Sel  | ect the                 | e pair       | of cor         | rect c  | ombi         | natio        | ns             |  |              |         |                    |         |           |              |            |
|             |  |                         | _            |                |         |              |              | nce to b       | olack 1  | rot          |         |                    |         |           |              |            |
|             |  |                         |              |                |         |              |              | to whit        |  |              |         |                    |         |           |              |            |
|             |  | _                       |              |                |         |              |              | hill bur       |  |              |         |                    |         |           |              |            |
|             |  |                         |              | _              |         |              |              | e to wl        |  | ıct          |         |                    |         |           |              |            |
|             | 1) I   |                         | ica i        | usao           |         | I III        | istanc       | c to wi        |  | ΙΙV          |         |                    | /       | 4) III I  | V            |            |
| 174         |  |                         | ogitiv       | . Uam          |         |              | n mo         | nnios o        | ,  |              | tonom   | v <b>a</b> oua     |         | ′         |              | 0          |
| 1/4.        |  | _                       |              |                |         |              |              |                |  |              | _       | _                  | 101. IV | ıı, wı    | at is the    | t          |
|             | _  | -                       | ge or t      | ne cn          |         |              | tea b        | y erytl        |  |              | s toeta | ans                | ,       | 1) 750/   |              |            |
|             | ,  | Zero                    |              |                | 2)      | 25%          |              |                | 3)   | 50%          |         |                    |         | 1) 75%    | )            |            |
| 175.        | Ma   | tch th                  | e follo      | wing           |         |              |              |                |  |              |         |                    |         |           |              |            |
|             | Set –I   |                         |              |                |         |              |              | Se             | t- II  |              |         |                    |         |           |              |            |
|             | A) Vitamin A enriched crop   |                         |              |                |         |              |              | 1. Garden peas |  |              |         |                    |         |           |              |            |
|             |  | Vitamin C enriched crop |              |                |         |              |              |                | 2. Spinach   |              |         |                    |         |           |              |            |
|             |  |                         |              |                | _       |              | n            |                |  | -            | gourd   | 1                  |         |           |              |            |
|             | <ul><li>C) Iron and calcium enriched crop</li><li>D) Protein enriched crop 4. Carrot</li></ul> |                         |              |                |         |              |              |                | 5. Bittor gourd  |              |         |                    |         |           |              |            |
|             |  | A-1 B-                  |              |                | _       |              |              | -2 D-1         | 3)   | Δ_4 F        | 8-3 C-  | 1 D <sub>-</sub> 2 | _       | 1) A_3    | B-4 C-2      | 2 D-1      |
| 176         |  |                         |              |                |         |              |              |                |  |              |         |                    |         | *         | the Pro      |            |
| 170.        |  | centa                   |              |                |         |              |              | ,101 DII       | nu m   | arric        | o a no  | ımaı               | рство   | 11. 111   | the 110      | geny       |
|             | 1) (   | •                       | ge or c      | COIOI          |         | 100%         |              |                | 2)   | 25%          |         |                    | ,       | 1) 50%    |              |            |
| 177         |  |                         | ina          | . wo w         | ,       |              |              | diatilla       |  | 2570         |         |                    |         | +) 30%    | )            |            |
| 1//.        |  |                         | wing         | are pr         |         |              |              | distilla       |  | Daan         |         |                    |         | 1) 3371-3 | a1           |            |
|             |  | Wine                    |              |                |         | Brand        | ıy           |                | ,  | Beer         |         |                    |         | l) Whi    | •            |            |
| 4=0         | 1) a   |                         |              |                | ,       | a, c         |              |                | ,  | a, d         | •       |                    |         | 4) b, d   |              |            |
| 178.        |  |                         |              |                | -       |              | _            | _              |  |              | _       |                    |         |           | ele A of     | _          |
|             |  | -                       |              | allelic        | forms   | s is 0.2     | 2, wh        | at is th       | e frec   | quenc        | y of h  | etero              | zygot   | es for    | that ge      | ne in that |
|             |  | pulatio                 | n?           |                |         |              |              |                |  |              |         |                    |         |           |              |            |
|             | 1) (   |                         |              |                | ,       | 0.16         |              |                | 3)   | 0.32         |         |                    | ۷       | 1) 0.48   | 3            |            |
| 179.        | Sel  | ect the                 | e corre      | ect co         | mbina   | tions        |              |                |  |              |         |                    |         |           |              |            |
|             | I) A   | Spergi                  | illusni      | <i>ger</i> – ] | Fungu   | s - Ci       | itric a      | cid            |  |              |         |                    |         |           |              |            |
|             | II)  | Acetol                  | actero       | aceti –        | - Bacte | erium        | – Ace        | etic aci       | d  |              |         |                    |         |           |              |            |
|             | III)   | Closti                  | ridium       | butyl          | icum –  | - Fung       | gus – i      | Butyric        | acid   |              |         |                    |         |           |              |            |
|             | ,  | Lacto                   |              |                |         | _            | •            | •              |  |              |         |                    |         |           |              |            |
|             | ,  | I II IV                 |              |                |         | II III I     |              | = ==           | 3)   | I III I      | V       |                    | ۷       | 4) I II ( | Ш            |            |
| 100         |  |                         | n ta-4       | nian :         |         |              |              | da ba-         |  |              |         | in -               |         | _         |              | TTO MO     |
| 190.        |  | _                       |              |                |         |              |              |                |  | exun(        | i With  | 1111 a (           | uecad   | e arte    | r goats      | were       |
|             |  |                         |              | ıne isi        | ana, t  | AHS IS       | an ex        | xample         |  | <b>C</b> -   |         | _                  |         |           |              |            |
|             | <ol> <li>Parasitism</li> <li>Competitive exclusion</li> </ol>                                  |                         |              |                |         |              |              |                | <ul><li>2) Coexistence</li><li>4) Commensalism</li></ul> |              |         |                    |         |           |              |            |
|             | 3) (   | compe                   | titive       | exclus         | sion    |              |              |                | 4)   | Comi         | nensa   | ıısm               |         |           |              |            |