|  | Roll No.     |        |             |  |
|--|--------------|--------|-------------|--|
|  | Sig. of Cand | lidate | <del></del> |  |

| Answer Sheet No     | 2-1 |
|---------------------|-----|
| Sig. of Invigilator |     |

# SECTION - A ( Marks 17)

| ime   | e allowed: 25 Minutes   |         |                                     | Revised Syllabus |   |  |  |  |  |  |
|-------|---|---------|-------------------------------------|------------------|---|--|--|--|--|--|
| IOTE: | on  | the que |                                     | ompleted in th   | parts of this section are to be answered<br>the first 25 minutes and handed over to the<br>ted. Do not use lead pencil. |  |  |  |  |  |
| 2. 1  | Circle the correct option i.e. A / B / C / D. Each part carries one mark. |         |                                     |                  |   |  |  |  |  |  |
|       | (i)   | The t   | two subunits of a ribosome have 60  | S and 40S part   | ticles. When both units attach, they  |  |  |  |  |  |
|       |   | form    | particle.                           |                  |   |  |  |  |  |  |
|       |   | A.      | 100S                                | В.               | 120S  |  |  |  |  |  |
|       |   | C.      | 80S                                 | D.               | 70S   |  |  |  |  |  |
|       | (ii)  | Ciste   | ernae are found in:                 |                  |   |  |  |  |  |  |
|       |   | A.      | Mitochondria                        | B.               | Golgi Complex   |  |  |  |  |  |
|       |   | C.      | Lysosomes                           | D.               | Nucleus   |  |  |  |  |  |
|       | (iii)   | The     | general formula of a Disaccharide i | s:               |   |  |  |  |  |  |
|       |   | Α.      | $C_6 H_{12} O_6$                    | В.               | $C_{12}H_{24}O_{11}$  |  |  |  |  |  |
|       |   | C.      | $C_{12}H_{22}O_{12}$                | D.               | $C_{12}H_{22}O_{11}$  |  |  |  |  |  |
|       | (iv)  | Viroi   | ds are made up of:                  |                  |   |  |  |  |  |  |
|       |   | A.      | Proteins                            | В.               | RNA   |  |  |  |  |  |
|       |   | C.      | DNA                                 | D.               | Both A and C  |  |  |  |  |  |
|       | (v)   | The I   | Bacteria which can grow in low con  | centration of ox | tygen are called bacteria.  |  |  |  |  |  |
|       |   | A.      | Aerobic                             | В.               | Microaerophilic   |  |  |  |  |  |
|       |   | C.      | Facultative                         | . D.             | Anaerobic   |  |  |  |  |  |
|       | (vi)  | Plasi   | modium belongs to gro               | up of protozoa.  |   |  |  |  |  |  |
|       |   | A.      | Apicomplexans                       | B.               | Ciliates  |  |  |  |  |  |
|       |   | C.      | Zooflagellates                      | D.               | Foraminifera  |  |  |  |  |  |
|       | (vii)   | The     | gametophyte generation in Bryophy   | /tes is:         |   |  |  |  |  |  |
|       |   | A.      | Diploid and Dominant                | B.               | Diploid and Reduced   |  |  |  |  |  |
|       |   | C.      | Haploid and Dominant                | D.               | Haploid and Reduced   |  |  |  |  |  |
|       | (viii)  | Circi   | nate Venation is an important chara | acteristic of:   |   |  |  |  |  |  |
|       |   | A.      | Ferns                               | В.               | Whisk Ferns   |  |  |  |  |  |
|       |   | C.      | Club Mosses                         | D.               | Horsetails  |  |  |  |  |  |

#### DO NOT WRITE ANYTHING HERE

| (ix)   | Pseu  | docoelomates includes phylum:        |                   |   |  |  |
|--------|---|--------------------------------------|-------------------|---|--|--|
|        | A.  | Platyhelminthes                      | B.                | Aschelminthes                             |  |  |
|        | C.  | Annelida                             | D.                | Chordata                                  |  |  |
| (x)    | In Ap   | poplast Pathway, the water moves     | from root cells t | to xylem tissue through:                  |  |  |
|        | A.  | Cytoplasm                            | B.                | Vacuoles                                  |  |  |
|        | C.  | Cell Walls                           | D.                | All of these                              |  |  |
| (xi)   | The   | enzyme which converts single stra    | nded RNA into     | cDNA in HIV is:                           |  |  |
|        | A.  | Diastase                             | B.                | Hexokinase                                |  |  |
|        | C.  | Cytochrome Oxidase                   | D.                | Reverse Transcriptase                     |  |  |
| (xii)  | Musi  | hrooms belong to:                    |                   |   |  |  |
|        | A.  | Club Fungi                           | B.                | Sac Fungi                                 |  |  |
|        | C.  | Conjugating Fungi                    | D.                | Bryophyta                                 |  |  |
| (xiii) | Antib   | oody-Mediated Immunity in man is     | produced by:      |   |  |  |
|        | A.  | T-Cells                              | В.                | B-Cells                                   |  |  |
|        | C.  | Monocytes                            | D.                | Neutrophils                               |  |  |
| (xiv)  | Four  | chambered heart is found in:         |                   |   |  |  |
|        | A.  | Lizard                               | В.                | Snake                                     |  |  |
|        | C.  | Tortoise                             | D.                | Crocodile                                 |  |  |
| (xv)   | The additional secretion of Gastric Juice by stomach is stimulated in response to |                                      |                   |   |  |  |
|        | A.  | Secretin                             | В.                | Insulin                                   |  |  |
|        | C.  | Gastrin                              | D.                | Glucagon                                  |  |  |
| (xvi)  | Whe   | n cells are infected by viruses, the | immune system     | n responds by secreting cytokines called: |  |  |
|        | A.  | Interferons                          | В.                | Interleukins                              |  |  |
|        | C.  | Histamine                            | D.                | Heparin                                   |  |  |
| (xvii) | Whic  | ch of the following is a lymphoid or | gan?              |   |  |  |
|        | Α.  | Spleen                               | В.                | Stomach                                   |  |  |
|        | C.  | Caecum                               | D.                | Pancreas                                  |  |  |
| For Ex | xamine  | er's use only:                       |                   |   |  |  |
|        |   |                                      | Total             | Marks: 17                                 |  |  |
|        |   |                                      | Mark              | s Obtained:                               |  |  |

----- 1HA 1510 (L) -----



## **Revised Syllabus**

Time allowed: 2:35 Hours

Total Marks Sections B and C: 68

NOTE: Answer any fou

Answer any fourteen parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

| \ <u></u> - |           | SECTION – B (Marks 42)   |          |
|-------------|-----------|--|----------|
| Q. 2        | Attem     | pt any FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. (14 $	imes$ 3 =     | 42)      |
|             | (i)       | Name three types of proteins on the basis of structure. Also give one function of each type.       | 03       |
|             | (ii)      | Give ONE function of each of the following organelle:  | 03       |
|             |           | a. Rough Endoplasmic Reticulum   |          |
|             |           | b. Chloroplast   |          |
|             |           | c. Mitochondria  |          |
|             | (iii)     | How does enzyme concentration affect the rate of an enzymatic action?                              | 03       |
|             | (iv)      | Write any three control measures against transmission of HIV.                                      | 03       |
|             | (v)       | Diagrammatically represent life cycle of <i>Rhizopus</i> .   | 03<br>03 |
|             | (vi)      | Define Holoenzyme, Competitive inhibition and Activator.   | 03       |
|             | (vii)     | a. Which Photosynthetic Pigments are found in Algae?   | 01       |
|             | (v.;;;)   | b. Name the group of Algae to which Kelps belong.  | 03       |
|             | (viii)    | Write down the contribution of the following:  a. De Duve b. Louis Pasteur c. Harshey and Chase    | •        |
|             | (ix)      | a. De Duve b. Louis Pasteur c. Harshey and Chase  How are Mesophytes adapted to their environment? | 03       |
|             | (x)       | Enlist any three functions performed by Large Intestine in Man.                                    | 03       |
|             | (xi)      | Define Mycorrhiza. Also define its types.  | 03       |
|             | (xii)     | Write down any three differences between Monocots and Dicots.                                      | 03       |
|             | (xili)    | Write any three ways by which the Plasma Membrane regulates cell interactions with                 |          |
|             |           | the environment.   | 03       |
|             | (xiv)     | Name any three types of Epithelial cell of stomach with their secretions.                          | 03       |
|             | (xv)      | a. What is Natural Active Immunity?  | 02       |
|             |           | b. Write any one effect of Pyrogens in the body.   | 01       |
|             | (xvi)     | Define the following:  |          |
|             |           | a. Transpiration b. Photoperiodism c. Homeostasis  | 03       |
|             | (xvii)    | a. Define amphitrichous and peritrichous conditions in the bacteria on the basis of                |          |
|             |           | number and arrangement of flagella.  | 02       |
|             |           | b. Who discovered bacteria?  | 01<br>03 |
|             | (xviii)   | How do Fungi differ from animals?  | 03       |
|             | (xix)     | Write the causative agent, symptoms and prevention of Typhoid.                                     |          |
|             |           | SECTION - C (Marks 26)   |          |
| Note:       | A         | Attempt any TWO questions. All questions carry equal marks. (2 x 13                                | = 26)    |
| Q. 3        | a.        | Give the general characteristics of Class Mammalia.  | 07       |
|             | b.        | Describe Watson and Crick Model for structure of DNA.  | 06       |
| Q. 4        | a.        | Explain Kreb's Cycle. Also give its schematic representation.                                      | 09       |
|             | b.        | Write a note on structure of Bacteriophage.  | 04       |
| Q. 5        | a.        | Describe the structures and functions of Chambers and Valves present in Human Heart.               |          |
|             |           | Also draw the labelled diagram showing internal structure of Heart.                                | 10       |
|             | <b>b.</b> | What are the uses of Gymnosperms?  | 03       |

| THE WEST AND THE  |              | <del></del> | <br> | <del>,</del> |
|-------------------|--------------|-------------|------|--------------|
|                   | Roll No.     |             |      |              |
|                   | Sig. of Cand | didate      | <br> |              |
| FI TOTAMAS AS THE |              |             |      |              |

| Answer Sheet No     |   |
|---------------------|---|
| Sig. of Invigilator | • |

## SECTION - A ( Marks 17)

| Time  | Time allowed: 25 Minutes Revised Syllabus   |        |   |                 |   |  |  |  |
|-------|---|--------|---|-----------------|---|--|--|--|
| NOTE: | Section—A is compulsory and comprises pages 1–2. All parts of this section are to be and on the question paper itself. It should be completed in the first 25 minutes and handed over Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil. |        |   |                 |   |  |  |  |
| Q. 1  | Circle the correct option i.e. A / B / C / D. Each part carries one mark.   |        |   |                 |   |  |  |  |
|       | (i)   | Crista | ae are found in:                            |                 |   |  |  |  |
|       |   | A.     | Golgi Complex                               | В.              | Mitochondria                            |  |  |  |
|       |   | C.     | Endoplasmic Reticulum                       | D.              | Chloroplast                             |  |  |  |
|       | (ii)  | In a F | Polysome, ribosomes are held toge           | ther by:        |   |  |  |  |
|       |   | A.     | Peptide Bond                                | В.              | tRNA                                    |  |  |  |
|       |   | C.     | rRNA  | D.              | mRNA                                    |  |  |  |
|       | (iii)   | Whic   | ch of the following is a pentose suga       | ar?             |   |  |  |  |
|       |   | A.     | Glyceraldehyde                              | В.              | Fructose                                |  |  |  |
|       |   | C.     | Deoxyribose                                 | D.              | Glycogen                                |  |  |  |
|       | (iv)  | Testo  | osterone is an example of:                  |                 |   |  |  |  |
|       |   | A.     | Terpenes                                    | B.              | Steroids                                |  |  |  |
|       |   | C.     | Lipoproteins                                | D.              | Waxes                                   |  |  |  |
|       | (v)   | The    | condition in which flagella are distril     | buted over enti | re surface of bacterial cell is called: |  |  |  |
|       |   | A.     | Peritrichous                                | В.              | Lophotrichous                           |  |  |  |
|       |   | C.     | Amphitrichous                               | D.              | Monotrichous                            |  |  |  |
|       | (vi)  | ident  | tify the given organism:                    |                 |   |  |  |  |
|       |   | A.     | Plasmodium                                  | 2               |   |  |  |  |
|       |   | B.     | Trypansoma                                  | 0.              |   |  |  |  |
|       |   | C.     | Entamoeba                                   |                 |   |  |  |  |
|       |   | D.     | Paramecium                                  |                 | _                                       |  |  |  |
|       | (vii)   | Whic   | ch one of the following is <b>NOT</b> an or | ganism?         |   |  |  |  |
|       |   | A.     | Round Worm                                  | В.              | Flat Worm                               |  |  |  |
|       |   | C.     | Ring Worm                                   | D.              | Segmented Worm                          |  |  |  |
|       | (viii)  | The    | feeding stage of slime mold is calle        | <b>d</b> :      |   |  |  |  |
|       |   | A.     | Amoeba                                      | В.              | Plasmodium                              |  |  |  |

C.

Hyphae

D.

Rhizoid

### DO NOT WRITE ANYTHING HERE

| (ix)   | Ferns           | belong to group:                               |             |                  |         |
|--------|-----------------|--|-------------|------------------|---------|
|        | Α.              | Psilopsida                                     | В.          | Lycopsida        |         |
|        | C.              | Sphenopsida                                    | D.          | Pteropsida       |         |
| (x)    | Resins          | s, terpentines and many oils are obtaine       | ed from:    |                  |         |
|        | A.              | Bryophytes                                     | В.          | Monocots         |         |
|        | C.              | Conifers                                       | D.          | Dicots           |         |
| (xi)   | Coeloi          | mates include phylum:                          |             |                  |         |
|        | A.              | Platyhelminthes                                | В.          | Annelida         |         |
|        | C.              | Aschelminthes                                  | D.          | Porifera         |         |
| (xii)  | Caspa           | rian strips are found in                       | cells of ro | oots.            |         |
|        | A.              | Epidermal                                      | В.          | Parenchyma       |         |
|        | C.              | Scierenchyma                                   | D.          | Endodermal       |         |
| (xiii) | Prima           | ry growth in plants occurs due to the ac       | ctivity of: |                  |         |
|        | A.              | Lateral Meristem                               | В.          | Apical Meristem  |         |
|        | C.              | Cork Cambium                                   | D.          | Vascular Cambium |         |
| (xiv)  | Which           | of the following is <b>NOT</b> a protein diges | ting enzy   | me?              |         |
|        | A.              | Trypsin  | В.          | Chymotrypsin     |         |
|        | C.              | Lipase   | D.          | Pepsin           |         |
| (xv)   |                 | is also called the pacemake                    | r of the he | eart.            |         |
|        | A.              | AV Node  | ₿.          | Purkinje Fibres  |         |
|        | C.              | SA Node  | D.          | Bundle of His    |         |
| (xvi)  | Lympi           | n capillaries found in the digestive syste     | em are ca   | lled:            |         |
|        | A.              | Thoracic Ducts                                 | В.          | Lymphatic Ducts  |         |
|        | C.              | Lymph Nodes                                    | D.          | Lacteals         |         |
| (xvii) | Cell-M          | lediated Immune Response is produce            | d by        | in man.          |         |
|        | A.              | T-Cells  | B.          | B-Cells          |         |
|        | C.              | Monocytes                                      | D.          | Neutrophils      |         |
|        |                 |  |             |                  |         |
| For E  | <b>xami</b> nei | 's use only:                                   | _           |                  | <u></u> |
|        |                 |  |             | Marks:           | 17      |
|        |                 |  | Mark        | s Obtained:      |         |

----- 1HA 1510 (ON) -----





NOTE:

## **BIOLOGY HSSC-I**

## **Revised Syllabus**

Time allowed: 2:35 Hours

Total Marks Sections B and C: 68

Answer any fourteen parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.

|       |         |   |                      | 5          | ECTION - B      | (Marks 42           | 2)          |             |                  |                      |
|-------|---------|---|----------------------|------------|-----------------|---------------------|-------------|-------------|------------------|----------------------|
| Q. 2  | Attem   | pt any  | OURTEEN parts        | _          |                 |                     |             | exceed      | 3 to 4 lines. (  | 14 x 3 = 42)         |
|       | (i)     | Give ONE function of each of the following organelle: |                      |            |                 |                     |             |             | 03               |                      |
|       |         | a.  | Smooth Endopl        | asmic R    | eticulum        |                     |             |             |                  |                      |
|       |         | b.  | Plasmid              |            |                 |                     |             |             |                  |                      |
|       |         | C.  | Lysosomes            |            |                 |                     |             |             |                  |                      |
|       | (ii)    | a.  | Draw general s       | tructure   | of an amino a   | cid.                |             |             |                  | 02                   |
|       |         | b.  | Which Polysaco       | charide i  | s also called ' | Animal Sta          | arch"?      |             |                  | 01                   |
|       | (iii)   | Write   | down the contribu    | ition of t | ne following:   |                     |             |             |                  |                      |
|       |         | a.  | Sanger and Nic       | holson     | b.              | Koshla              | and         | C.          | Robert Whittal   | çer <b>03</b>        |
|       | (iv)    | How o   | loes substrate cor   | ncentrati  | on affect the   | ate of an           | enzymati    | c action    | ?                | 03                   |
|       | (v)     | Define  | Cofactor, Coenz      | yme and    | l Prosthetic g  | oup.                |             |             |                  | 03                   |
|       | (vi)    | What  | are the Non-living   | charact    | eristics of Vir | uses?               |             |             |                  | 03                   |
|       | (vii)   | Diagra  | ammatically repre    | sent the   | life cycle of H | IV.                 |             |             |                  | 03                   |
|       | (viii)  | a.  | Define the type      | s of Hete  | erotrophic Ba   | cteria. Give        | e one ex    | ample of    | each type.       | 02                   |
|       |         | b.  | Name the vacc        | ine used   | against TB.     |                     |             |             |                  | 01                   |
|       | (ix)    | How   | lo Fungi differ fror | n Plants   | ?               |                     |             |             |                  | 03                   |
|       | (x)     | Write   | down any three m     | nain feat  | ures of Bryop   | hytes.              |             |             |                  | 03                   |
|       | (xi)    | Give t  | hree distinguishin   | g charac   | teristics of Pl | ıy <b>l</b> um Ascl | helminthe   | <b>9</b> S. |                  | 03                   |
|       | (xii)   |   | Hydrophytes. Ho      |            |                 |                     |             |             |                  | 03                   |
|       | (xiii)  | Give t  | he scientific name   | es of the  | organisms w     | hich cause          | the follo   | wing dis    | eases:           | 03                   |
|       |         | a.  | Malaria              | b.         | Typhoid         |                     | C.          | Choler      |                  | _                    |
|       | (xiv)   | a.  | Which circuits a     | •          |                 |                     |             | of man?     | ?                | 02                   |
|       |         | b.  | Name the arter       | -          | supplies bloo   | to the He           | eart.       |             |                  | 01                   |
|       | (xv)    | Define  | the following ten    |            |                 |                     |             |             |                  | 03                   |
|       |         | a.  | Glycolipids          |            |                 |                     | C.          | Vernali     | ization          |                      |
|       | (xvi)   | What  | is Artificial Active |            | -               |                     |             |             |                  | 03                   |
|       | (xvii)  | <b>a</b> .  | Name any two         |            |                 |                     |             |             |                  | 02                   |
|       |         | b.  | Who proposed         |            | •               | esis for op         | ening an    | d closing   | of stomata?      | 01                   |
|       | (xviii) |   | down the structur    |            | •               | ·5_ 5               |             |             |                  | 03<br>03             |
|       | (xix)   | vvrite  | any three comme      | rcial app  | olications of G | ibbereilins         | <b>.</b>    |             |                  | 03                   |
|       |         |   |                      | <u> </u>   | SECTION - C     | (Marks 20           | <u>6)</u>   |             |                  |                      |
| Note: | A       | ttempt  | any TWO questi       | ons. Ali   | questions c     | arry equa           | l marks.    |             | (                | $(2 \times 13 = 26)$ |
| Q. 3  | a.      | Descr   | ibe the different p  | hases o    | f Calvin Cycle  | . Also give         | e its sche  | matic re    | presentation.    | 09                   |
|       | b.      | What  | is Mutualism? Ho     | w do Fu    | ngi show Mut    | ualism?             |             |             |                  | 04                   |
| Q. 4  | a.      | Write   | down the general     | charact    | eristics of Cla | ss Reptilia         | l <b>.</b>  |             |                  | 07                   |
|       | b.      | What  | are the functions    | perform    | ed by Plasma    | Membran             | e Proteir   | is?         |                  | 06                   |
| Q. 5  | a.      | Give a  | a detailed account   | t of struc | ture of Huma    | n Stomach           | n. Illustra | te interna  | al anatomy of st |                      |
|       |         | with a  | labelled diagram     | •          |                 |                     |             |             |                  | 09                   |
|       | b.      | What  | is Dyspepsia? Gi     | ve its ca  | use, preventi   | on and trea         | atment.     |             |                  | 04                   |

| Answer Sheet No     | 3 |
|---------------------|---|
| Sig. of InvigIlator |   |

## SECTION - A (Marks 17)

|      |       | _   |    |      |      |
|------|-------|-----|----|------|------|
| Time | allow | ed. | 25 | Mint | ıtas |

(Old Syllabus)

NOTE: Section—A is compulsory and comprises pages 1–2. All parts of this section are to be answered on the question paper itself. It should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

#### Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

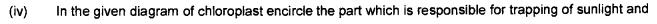
| (i) | Out of 92 naturally occurring chemical elements, how many are commonly used in forming the |
|-----|--|
|     | chemical compounds from which living organisms are made?                                   |

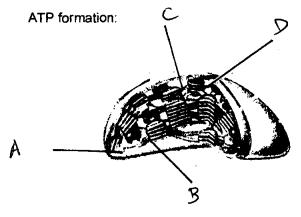
- A. 12
- B. 16
- C. 14
- D. 10
- (ii) How much glucose does our blood normally contain?
  - A. 0.08%
- B. 0.8%
- C. 8.0%
- D. 1.08%
- (iii) RNAs are synthesized by DNA in a process known as:
  - A. Translation

B. Transcription

C. Transformation

D. Reverse transcription





- (v) The optimum temperature for enzymes of human body is:
  - A.  $32^{\circ}C$
- B.  $46^{\circ}C$
- C.  $37^{\circ}C$
- D.  $35^{\circ}C$
- (vi) The site which is responsible for break down of fatty acids to succinate is called:
  - A. Lysosomes
- B. Peroxisomes
- C. Golgibodies
- D. Glyoxysomes
- (vii) Which is a phase of rapid growth in which bacteria divide at exponential rate?
  - A. Lag phase
- B. De
- Decline phase C.
- Log phase
- D. Stationary phase
- (viii) The disease, African sleeping sickness in human is caused by:
  - A. Plasmodium
- 3. Forams
- C. Entamoeba
- D.
- Trypanosoma

#### DO NOT WRITE ANYTHING HERE

| horylation $NADPH + I$ $NADPH + I$ $2(C_3H_4O_3) - 2(C_3H_4O_3) -$ | of different $H^+ + 3A$ $H^+ + 3A$ $+ 2NAD$ of respiration of perturbation of Oxygen B.   | ont reactions are of $DP + 3Pi + \frac{1}{2}O$ $DP + 3Pi + \frac{1}{2}O$ $P + 3$ | $\begin{array}{c} 2 \rightarrow (CI) \\ 2 \rightarrow NA \\ OH) + 2 \\ OB) + 2 \\$   | AD  h, encircle the pa  A  T  100 ml blood at  | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl c$<br>reaction $a$<br>a<br>a<br>a<br>a<br>a<br>a<br>a  | $a \rightarrow Chl b$ of oxidative  |
|--|---|--|--|--|---|---|
| Carotenoids ical equations of shorylation $NADPH + I$ $NADPH + I$ $2(C_3H_4O_3) - 2(C_3H_4O_3) $ | of different $H^+ + 3A$ $H^+ + 3A$ $+ 2NAD$ $+ 2NAD$ of respiration of aperturation of Oxygon B. so the action  | ont reactions are of $DP + 3Pi + \frac{1}{2}O$ $DP + 3Pi + \frac{1}{2}O$ $DP + 3Pi + \frac{1}{2}O$ $PH_2 \rightarrow 2(C_2H_5O)$ And the system of one sign which normal 20 ml are transport of $D$  | given below $P_2 \rightarrow (CI)$ $P_2 \rightarrow NA$ $P_3 \rightarrow P_4 \rightarrow P_5$ cockroact al human $P_4 \rightarrow P_5$ $P_4 \rightarrow P_5$ $P_5 \rightarrow P_6$ $P_6 \rightarrow P_6$ $P_6$ | Carotenoids  low. Choose the interpretation of the interpretation  | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl c$<br>reaction $a$<br>a<br>a<br>a<br>a<br>a<br>a<br>a  | of oxidative $P + 9Pi + H_2O$ communicates with  and carries at the sea $40 \text{ ml}$   |
| Carotenoids ical equations of horylation $NADPH + I$ $NADPH + I$ $2(C_3H_4O_3) - 2(C_3H_4O_3) -$ | of different $H^+ + 3A$ $H^+ + 3A$ $+ 2NAD$ $+ 2NAD$ of respiration of aperturation of Oxygon B. so the action  | ont reactions are of $DP + 3Pi + \frac{1}{2}O$ $DP + 3Pi + \frac{1}{2}O$ $DP + 3Pi + \frac{1}{2}O$ $PH_2 \rightarrow 2(C_2H_5O)$ And the system of one sign which normal 20 ml are transport of $D$  | given below $P_2 \rightarrow (CI)$ $P_2 \rightarrow NA$ $P_3 \rightarrow P_4 \rightarrow P_5$ cockroact al human $P_4 \rightarrow P_5$ $P_4 \rightarrow P_5$ $P_5 \rightarrow P_6$ $P_6 \rightarrow P_6$ $P_6$ | Carotenoids  low. Choose the interpretation of the interpretation  | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl c$<br>reaction $a$<br>a<br>a<br>a<br>a<br>a<br>a<br>a  | of oxidative $P + 9Pi + H_2O$ communicates with  and carries at the sea $40 \text{ ml}$   |
| Carotenoids ical equations of horylation $NADPH + I$ $NADPH + I$ $2(C_3H_4O_3) - 2(C_3H_4O_3) -$ | of different $H^+ + 3A$ $H^+ + 3A$ $+ 2NAD$ of respiration of perturbation of Oxygen B.   | ont reactions are of $DP + 3Pi + \frac{1}{2}O$                   | given below $P_2 \rightarrow (CI)$ $P_2 \rightarrow NA$ $P(CI)$  | Carotenoids flow. Choose the in $H_2(O)_3 + 6NADF$ $D + H_2O + 3AT$ $NAD + 2CO_2$ $AD$ The encircle the part of t  | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl a$<br>reaction $a$<br>a<br>a<br>a<br>a<br>a<br>a<br>a  | of oxidative $P + 9Pi + H_2O$ communicates with  and carries at the sea $40 \text{ ml}$   |
| Carotenoids ical equations of horylation $NADPH + I$ $NADPH + I$ $2(C_3H_4O_3) - 2(C_3H_4O_3)$ given diagram for by 10 pairs of haximum amounts about:   | of different $H^+ + 3A$ $H^+ + 3A$ $+ 2NAD$ $+ 2NAD$ of respiration of aperture   | ont reactions are of $DP + 3Pi + \frac{1}{2}O$ $DP + 3Pi + \frac{1}{2}O$ $PH_2 \rightarrow 2(C_2H_5O)$ $PH_2 \rightarrow 2(C_3H_6O)$ actory system of ones:  | given below $P_2 \rightarrow (CI)$ $P_2 \rightarrow NA$ $P_3 \rightarrow P_4$ $P_4 \rightarrow P_5$ cockroace  | Carotenoids flow. Choose the flow. Choose the flow. $H_2O$ <sub>3</sub> + 6NADF $D + H_2O + 3AT$ $NAD + 2CO_2$ $AD$ the encircle the parameter $A$   | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl a$<br>reaction $a$<br>a<br>a<br>a<br>a<br>a<br>a<br>a  | of oxidative $P + 9Pi + H_2O$ communicates with   |
| Carotenoids ical equations of horylation $NADPH + I$ $NADPH + I$ $2(C_3H_4O_3) - 2(C_3H_4O_3)$ given diagram for by 10 pairs of haximum amounts.   | of different $H^+ + 3A$ $H^+ + 3A$ $+ 2NAD$ of respiration of respirations of the spectrum of | ont reactions are of $DP + 3Pi + \frac{1}{2}O$ $DP + 3Pi + \frac{1}{2}O$ $P + 3$ | given below by $CI$ and $CI$   | Carotenoids ow. Choose the interpretation of the interpretation o  | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl c$<br>reaction $a$<br>a<br>a<br>a<br>a<br>a<br>a<br>a  | of oxidative $P + 9Pi + H_2O$ communicates with   |
| Carotenoids ical equations of horylation $NADPH + I$ $NADPH + I$ $2(C_3H_4O_3) - I$ $2(C_3H_4O_3) - I$ given diagram of  | of different<br>$H^+ + 3A$<br>$H^+ + 3A$<br>+ 2NAD<br>+ 2NAD<br>of respira  | ont reactions are of $DP + 3Pi + \frac{1}{2}O$                   | given bel $C_2 \rightarrow (CI$ $C_2 \rightarrow NA$ $C(CI) \rightarrow NA$  | Carotenoids flow. Choose the flow. Choose the flow. $H_2O$ 3 + 6NADF $D + H_2O + 3AT$ $NAD + 2CO_2$ $AD$ th, encircle the parameters of th | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl c$<br>reaction $a$<br>a + 9ADa<br>a + P  | $a \rightarrow Chl b$ of oxidative $P + 9Pi + H_2O$   |
| Carotenoids ical equations of horylation  NADPH + I  | of different $H^+ + 3A$   | ont reactions are $Q$ $DP + 3Pi + \frac{1}{2}O$  | given bel $Q_2 	o (CI)$  | Carotenoids low. Choose the $H_2O)_3 + 6NADF$  | main pho<br>$b \rightarrow Ca$<br>$\rightarrow Chl a$<br>reaction $a$<br>a  | $a \rightarrow Chl b$ of oxidative  |
| Carotenoids  |   |  |  | Carotenoids  | main pho $b \to Ca$ $\to Chl \ a$   | $a \rightarrow Chl b$   |
| Carotenoids  |   |  |  | Carotenoids  | main pho $b \to Ca$ $\to Chl \ a$   | $a \rightarrow Chl b$   |
|  | $s \rightarrow Chl$   |  |  |  | main pho $b \rightarrow Ca$   |   |
|  |   | $ds \rightarrow Chl \ a$   | ₿.   | C11 C11  | main pho  | . • •   |
|  |   |  |  | ory pigments to  |   | tosynthetic pigment.  |
| Euplectella  | В.  | Sycon  | C.   | Leucoselenia   | D.  | Spongilla   |
| flower Basket i  | is made   | up of  |  | _ sponge.  |   |   |
| Fasicola   |   |  | D.   | Enterobius ver   | rmicularis  | 5   |
| Taenia   |   |  | В.   |  |   |   |
|  |   | •  |  |  | •   | •   |
|  | , ,   |  |  |  |   |   |
|  |   | •  | R  | Psilotum and (   | Cooksoni  | ia  |
| Also Hodon as assessed   |   | •  | C.   |  |   |   |
| Zygomycota   | ₽   | _  | _  | Deuteromycot   | a D.  | Basidiomycota   |
|  | Psilotum and Cooksonia ar can cau Taenia Fasicola s flower Basket   | Psilotum and Psilophy Cooksonia and Tmesi can cause sever Taenia Fasicola flower Basket is made  | nly living genera of Psilopsida is:  Psilotum and Psilophyton  Cooksonia and Tmesipeteris  can cause severe anemia and re  Taenia  Fasicola  flower Basket is made up of   | Psilotum and Psilophyton B.  Cooksonia and Tmesipeteris D.  can cause severe anemia and retards ph Taenia B.  Fasicola D.  sflower Basket is made up of  | Cooksonia and Tmesipeteris D. Psilotum and Cooksonia and Tmesipeteris D. Psilotum and Cooksonia and | Psilotum and Psilophyton B. Psilotum and Cookson Cooksonia and Tmesipeteris D. Psilotum and Tmesipetcan cause severe anemia and retards physical and mental growth Taenia B. Ancylostoma duodenal Fasicola D. Enterobius vermicularis sflower Basket is made up ofsponge. |

Page 2 of 2(Bio)



32

(Old Syllabus)

Time allowed: 2:35 Hours

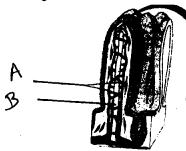
Total Marks Sections B and C: 68

NOTE: Answer any fourteen parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.

### SECTION - B (Marks 42)

| Q. 2 | Atten  | npt any  | FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. (14 x 3 =          | 42) |
|------|--------|----------|--|-----|
|      | (i)    |          | ne the following:  | ·,  |
|      |        | a.       | Phyletic lineage   | 01  |
|      |        | b.       | Integrated Disease Management  | 01  |
|      |        | C.       | Endangered species   | 01  |
|      | (ii)   | a.       | What is hydroponic culture technique? What is the significance of this technique?          | 02  |
|      |        | b.       | Differentiate between population and community.  | 01  |
|      | (iii)  | a.       | What is an ester? Express it with chemical equation.                                       | 02  |
|      |        | b.       | Write down two differences between RNA and DNA.  | 01  |
|      | (iv)   | Prote    | eins are classified according to their structure:  |     |
|      |        | a.       | Classify the proteins into different groups on the basis of structure, also give examples. | 02  |
|      |        | b.       | Draw structural formula of ATP.  | 01  |
|      | (v)    | a.       | Give the name of the given diagram:  | 01  |
|      |        | b.       | Name the labelled parts A and B.   | 01  |
|      |        | о.<br>С. | Write down the functions of labelled part A.   | 01  |
|      | (vi)   |          | t are the contributions of followings scientists in classification?                        | ٠.  |
|      | (•1)   | a.       | E. Chatton   | 01  |
|      |        | b.       | Ernst Hackel   | 01  |
|      |        | C.       | Lynn Margulis and Karlene  | 01  |
|      | (vii)  | a.       | Write down any four differences between Gram-positive and Gram-negative bacterial          |     |
|      | •      |          | cell wall.   | 02  |
|      |        | b.       | What is super blue green algae?  | 01  |
|      | (viii) | a.       | What are inhibitors? How do Irreversible inhibitors check the reaction rate?               | 02  |
|      |        | b.       | Define red tides.  | 01  |
|      | (ix)   | a.       | What are water molds?  | 01  |
|      |        | b.       | Which disease is caused by Phytophthora infestans?   | 01  |
|      |        | C.       | What was the impact of this disease on Irish people?                                       | 01  |
|      | (x)    | Why      | is fungi considered a successful group of land organisms?                                  | 03  |
|      | (xi)   | a.       | What is double fertilization? In which plants do this occur? Also write its significance   | 02  |
|      |        | b.       | Plants Lycopodium and Equisetum belong to which division?                                  | 01  |
|      | (xii)  | Write    | e down the botanical names of given plants:  |     |
|      |        | a.       | Wheat  | 01  |
|      |        | b.       | Potato   | 01  |
|      |        | C.       | Shisham  | 01  |
|      | (xiii) | Write    | e down the functions of the following organs:  |     |
|      |        | a.       | Nematocysts  | 01  |
|      |        | b.       | Syrnix   | 01  |
|      |        | C.       | Swim bladder   | 01  |

| XIV)   | How  | do Echinoderms resemble Chordates?          | 03 |  |
|--------|--|---|----|--|
| xv)    | a.   | What is Z scheme?                           | 01 |  |
|        | b.   | Name the photosystems involved in Z scheme. | 01 |  |
|        | C.   | What are the products of Z scheme?          | 01 |  |
| xvi)   | Differentiate between Alcoholic and lactic acid fermentation |   |    |  |
| (xvii) | Figu   | re of Villus is given:                      |    |  |
|        |  |   |    |  |



|         | a.                         | What do the labelled parts A and B show?  | 01 |  |  |
|---------|----------------------------|---|----|--|--|
|         | b.                         | Write down the functions of part A and B?   | 02 |  |  |
| (xviii) | 70%                        | of Carbon dioxide is transported in the blood in the form of bicarbonate in combination |    |  |  |
|         | with sodium in the plasma: |   |    |  |  |
|         | a.                         | Write down the chemical equation of the reaction.                                       | 01 |  |  |
|         | b.                         | Name the enzyme used in the reaction.   | 01 |  |  |
|         | C.                         | What happens when bicarbonate reaches in the lungs?                                     | 01 |  |  |
| (xix)   | Desc                       | ribe any three functions of lymphatic system.   | 03 |  |  |

## SECTION - C (Marks 26)

| MOLE: |    | Attempt any 1440 questions. All questions carry equal marks. (2 x                           | 13 – 20) |
|-------|----|---|----------|
| Q. 3  | a. | What is virulent phage? How does it reproduce inside the host cell? Give its various steps. | 08       |
|       | b. | What is HIV? Which cell is infected by HIV? Give its symptoms and mode of transmission.     | 05       |
| Q. 4  | a. | Describe the general characters of Mammals.   | 05       |
|       | b. | Differentiate between accelomated and coelomated animals. Give examples.                    | 04       |
|       | c. | Write a note on class Gastropoda and Cephalopoda with examples.                             | 04       |
| Q. 5  | a. | What is cardiac cycle? Describe its various steps.  | 06       |
|       | b. | Write down the functions performed by blood plasma.   | 03       |
|       | c. | Describe the heart diseases given below:  | 04       |
|       |    | (i) Heart attack<br>(ii) Haemorrhage  |          |
|       |    |   |          |

---- 1HA 1510----