



DS-003-001204 Seat No. _____

B. Sc. (Sem. II) (CBCS) Examination

April / May – 2015

Botany : Paper - 201

(Cell Biology, Bio-Chemistry, Genetis, Physiology & Anatomy)

Faculty Code : 003

Subject Code : 001204

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) Write answers of all questions in main answer book.
(2) Draw neat and labelled diagrams wherever necessary.
(3) Figure to the right side indicate full marks for the questions.

- 1 Choose the correct answer and write in the answer book. **20**
- (1) Which one of the following is an exception to cell theory ?
(A) Virus (B) Bacteria
(C) Mycoplasma (D) None of these
- (2) The infectious particle of virus is called
(A) Capsid (B) Virion
(C) Envelope (D) E.Coil
- (3) Chiasmata appears during
(A) Diakinesis (B) Synaps
(C) Diplotene (D) Protein syn.
- (4) The structure through which Thylakoids of a granum are connected with the Thylakoids of other granum is called
(A) Plasmodesmeta (B) Tonoplast
(C) Fret membrane (D) Storma
- (5) β -oxidation is well established for
(A) Saturated fatty acid(B) Unsaturated Fatty Acid
(C) Both A and B (D) None of these

- (6) $E = MC^2$ describes the relationship between
 (A) Energy and Matter
 (B) Energy and Cell
 (C) Energy and Antrophy
 (D) None of these
- (7) Which one of the following traits was not studied by Mendel ?
 (A) Flower Position (B) Seed Colour
 (C) Flower Colour (D) Seed Size
- (8) In electron microscope what is used in place of light ?
 (A) UV rays (B) Artificial light
 (C) Beam of electron (D) Sound waves
- (9) A mass of dividing, undifferentiated cell in a tissue culture is called
 (A) A shield (B) a callus
 (C) an embryoid (D) a plasmodium
- (10) Who introduced the pH measurement scale ?
 (A) Robert Hooke (B) Sorensen
 (C) Rudolf Virchow (D) Jakob
- (11) Stomata of CAM plants :
 (A) Are always open
 (B) Some time open
 (C) Open during night and close during the day
 (D) Never open
- (12) Which of the following is concerned with photorespiration ?
 (A) Dictyosome (B) Glyoxisome
 (C) Peroxisome (D) Ribosome
- (13) Root-hair emerge from
 (A) Cortex (B) Epidermis
 (C) Pericycle (D) Endodermis
- (14) Monocots differ from typical dicots in
 (A) Absence of cortex
 (B) Absence of cambium
 (C) Absence of periderm
 (D) Absence of seeds
- (15) Lysigenous cavities are present in
 (A) V.B. of monocot root
 (B) V.B. of monocot stem
 (C) V.B. of dicot root
 (D) V.B. of dicot stem.

- (16) "Kranz" type of anatomy is found in
 (A) C₄ plants (B) C₃ plants
 (C) C₂ Plants (D) None of these
- (17) Applications of colorimetry is
 (A) To measure turbidity of liquids.
 (B) To use for plasma fractionation
 (C) To measure amino acid
 (D) All the above
- (18) Functional unit of chloroplast is
 (A) Quantasome (B) Stroma
 (C) Oxysome (D) K⁺
- (19) Distance between sugar and phosphate in DNA is
 (A) 3.4 Å (B) 34 Å
 (C) 7 Å (D) 20 Å
- (20) Who coined the word enzyme ?
 (A) Traube (B) Kuhne
 (C) Buchner (D) Sumner

- 2 (a) Give the answer in short : (any three) 6
- (1) Define pH and buffer.
 - (2) Write notes on applications of colorimeter
 - (3) Draw labelled structure of DNA.
 - (4) Describe Histone proteins and its significance.
 - (5) Difference between Dicot and Monocot Leaf anatomy.
 - (6) Write "Principle of Segregation".
- (b) Give the answer in brief : (any three) 9
- (1) Write note on – Enzymes action mechanism.
 - (2) Write note on – Paper chromatography.
 - (3) Explain – Ultra structure of mitochondria.
 - (4) Explain – Types of chromosome according to position of centromere.
 - (5) Write the results of Mendel's dihybrid cross and principle of 'Independent assortment'.
 - (6) Describe – Functions of Electron microscope.

- (c) Give the answer in brief : (any two) 10
- (1) Write note on plant tissue culture and its applications.
 - (2) Explain β -oxidation of fatty acid and its significance.
 - (3) What is Genetic Code ? Describe the characteristics of genetic code.
 - (4) Describe – Anatomy of Dicot stem.
 - (5) Explain – The Laws of thermodynamics with examples and give its limitations.
- 3 (a) Give the answer in short : (any three) 6
- (1) Write down functions of chloroplast.
 - (2) Give six character of amino acids.
 - (3) What are chiasmata ? State their significance.
 - (4) Write the function of condenser lens in microscope.
 - (5) Explain – Karyotype and idiogram.
 - (6) Explain – Translation.
- (b) Give the answer in brief : (any three) 9
- (1) Write importance of pH scale.
 - (2) Describe Carotenoids and its functions.
 - (3) Describe Viroids and how they differ from viruses.
 - (4) Significance of photorespiration.
 - (5) Why did mendel select the pea plant for his experiment on plant hybridisation.
 - (6) What is CAM ? Which plants follows CAM cycle ? Why ?
- (c) Give the answer in brief : (any two) 10
- (1) Explain different stage of mitosis.
 - (2) Ultra structure of Nucleus
 - (3) Explain – C_4 pathway
 - (4) Describe Mechanism of DNA Replications
 - (5) Explain – Cell theory.