HB-003-001535 Seat No. _____

Third Year B. Sc. (Sem. V) (CBCS) Examination

May / June - 2017

Zoology : Z - 503

(Biochemistry, Cytology & Genetics) (New Course)

Faculty Code : 003
Subject Code : 001535

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) Illustrate your answers with neat and labelled diagrams.
(2) Figures to the right side indicate full marks of question.

1 Answer the following questions : **20**

(1) During formation of Disaccharide two monosaccharide molecules linked with glycosidic linkage and release one molecule of _____.

(2) Give any two examples of chromoprotein.

(3) Due to lack of which vitamin night blindness and dry eye occurs ?

(4) The enzyme catalyse the synthesis of a new substance by condensing two groups, using ATP are known as _____.

(5) Give any five examples of macro elements.

(6) A solution having pH = 8, the nature of solution is _____.

(7) For separation of Amino-acids, which technique is used in laboratory ?

(8) Which technique is used to separate organelles by their density ?

(9) In which type of cancer, we can find excessive production of lymphocytes by the lymph nodule and spleen ?

(10) The smallest unit of a gene. whose mutation can produce a mutant phenotype is known as _____.

(11) In the structure of gene, Pentose Sugar + Nitrogen base + Phosphate = _____.

(12) In the structure of gene, the sequence of nucleotide in one chain is AGC TAA GCA CGT; Give the sequence of nucleotides in other complementary chain.

(13) Give any two examples of stains which are commonly used for chromosomal study.

(14) _____ linked inheritance causes colour blindness and Haemophilia.

(15) Which type of chromosomes are never found in human beings ?

(16) In human chromosomes, which types of chromosomes are included in group "G" ?

(17) X-rays, gamma rays, α and β rays are which type of mutagenic agents ?

(18) Prenatal screening of babies for gross chromosomal aberration and sex prediction is possible by which technique ?

(19) Lack of chlorable pigment in the retinal cones results in an ability to discriminate green colour, this defect is known as _____.

(20) When broken segment of chromosome reattached to original chromosome in reverse order, is known as _____ type chromosomal mutation.

2 (a) Write any three out of six : **6**

(1) Amino acids

(2) Y linked inheritance with example.

(3) Primary protein.

(4) Single staining technique.

(5) Duplication type mutation.

(6) Any one theory for possible causes of cancerous growth of carcinogenesis.

(b) Write any three out of six. **9**

(1) Importance of Vitamins.

(2) Gene's affecting man's intelligence.

(3) Physical and chemical properties of carbohydrates.

(4) Haemophilia as a heriditary trait.

(5) Translocation type chromosomal mutation.

(6) Principle and working mechanism of paper chromatography.

(c) Write any two out of five. **10**

(1) Classification of proteins.

(2) Types of cancer and characteristic of cancer cell in short.

(3) Human chromosomes.

(4) Principle, working mechanism and uses of centrifuge.

(5) DNA finger printing.

3 (a) Write any three out of six. **6**

(1) Define : Cistron and racon.

(2) Temperature as a mutagenic agent.

(3) Delation type chromosomal mutation.

(4) Secondary protein

(5) Lock and key theory for enzymes.

(6) Double staining technique.

(b) Write any three out of six. **9**

(1) Importance of minerals

(2) Types of enzymes.

(3) Inversion type chromosomal mutation.

(4) Colour blindness as a heriditary trait.

(5) Gene affecting man's health.

(6) Chemicals as a mutagenic agents.

(c) Write any two out of five. **10**

(1) Classify carbohydrates and describe the importance of carbohydrates.

(2) Amniocentesis.

(3) Molecular structure of gene.

(4) Radiation as a mutagenic agent.

(5) Principle, working mechanism and uses of pH meter.
