# DCC-003-001535

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

**April / May – 2015**

## Zoology : Z-503

*(Biochem, Cytology, Genetics)*

**Faculty Code : 003**

**Subject Code : 001535**

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

Instructions : (1) Illustrate your answer with neat and labelled diagrams.
(2) Figure to the right side indicate full marks of questions.

1 Choose appropriate answer for the following : 20

(1) Which of the following is not reducing sugar ?

(A) Erythrose

(B) Sucrose

(C) Glucose

(D) Threose

(2) Which of these is quarternary structure of protein ?

(A) Histones

(B) Insuline

(C) Ribonuclease

(D) Haemoglobin

(3) The enzyme catalyse the isomerisation of a substance to another form are known as

(A) Oxido-reductases

(B) Transferases

(C) Isomerases

(D) Lyases

(4) Due to lack of which vitamin night-blindness and dry eye occurred ?

(A) Vitamin K

(B) Folic acid

(C) Biotin

(D) Vitamin A

(5) Which of the following are micro elements ?

(A) Amino acids

(B) Mn, Cu, Mo

(C) Hormones

(D) NaCl

(6) There is excessive production of lymphocytes by the lymph node and spleen, which type of cancer is this ?

(A) Carcinomas

(B) Sarcomas

(C) Lymphomas

(D) Leukemias

(7) Centrifuge consists of

(A) Rotor and motor

(B) Glass plate and motor

(C) Chember and paper

(D) Electrod and motor

(8) If pH of solution is 7, the solution is _____ in nature.

(A) Acidic

(B) Basic

(C) Neutral

(D) None of above

(9) Paper chromatography is used for separation of

(A) Nucleus

(B) Water

(C) Amino acids

(D) Alchohol

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

(A) Cistron

(B) Muton

(C) Recon

(D) Complete gene

(11) In molecular structure of DNA, both polynucleotides strands remain separated by _____ distance.

(A) 20 $\mathring{A}$

(B) 30 $\mathring{A}$

(C) 40 $\mathring{A}$

(D) 50 $\mathring{A}$

(12) In DNA the two polynucleotide strands are held together by _____ between specific pairs of purines and pyrimidines.

(A) Amino acid bond

(B) Sulpher bond

(C) Phosphodiester bond

(D) Hydrogen bonds

(13) In which type of chromosomal mutation the broken segment reattached to original chromosome in reverse order ?

(A) Deletion

(B) Duplication

(C) Inversion

(D) Translocation

(14) The broken segment becomes attached to a non homologus chromosomes resulting in a new linkage relations, this type of chromosomal mutation is known as :

(A) deletion

(B) duplication

(C) inversion

(D) translocation

(15) Which of the following is non-ionizing radiators ?

(A) X-rays

(B) Ultra-violet rays

(C) Gamma rays

(D) Electrons

(16) The most effective wavelength of ultra-violet for inducing mutation is about_____.

(A) 2500 $\mathring{A}$

(B) 2600 $\mathring{A}$

(C) 2700 $\mathring{A}$

(D) 2400 $\mathring{A}$

(17) For Karyotyping of human chromosomes _____ is added to arrest cell division at metaphase stage.

(A) Colchicine

(B) Phytohaemagglutinin

(C) Acetoorcine

(D) Acito carmaine

(18) In Human Karyotype which types of chromosomes included in group "G" ?

(A) Meta centric

(B) Sub-meta centric

(C) Acro centric

(D) Telo centric

(19) Excessive development of hairs on pinna of ear is the example of _____.

(A) X-linked inheritance

(B) Y-linked inheritance

(C) XY-linked inheritance

(D) None of above

(20) DNA finger printing techniques was discovered by :

(A) Alec Jeffereys

(B) Riggs

(C) Khorana

(D) Kary Mullis

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

(i) Importance of carbohydrates

(ii) Structural organization of secondary protein

(iii) Single staining technique

(iv) Deletion type chromosomal mutation

(v) Describe amino-acids (in short)

(vi) Haemophilia as hereditary trait.

(b) Write any three out of six : 9

(i) Importance of minerals

(ii) Inversion type of chromosomal mutation

(iii) Quaternary proteins

(iv) Chemical mutagenes

(v) Amniocentesis

(vi) Double staining technique.

(c) Write any two out of five : 10

(i) DNA finger printing

(ii) Describe Human chromosomes

(iii) Paper chromatography

(iv) Types of cancer

(v) Fat soluble vitamins.

3 (a) Write any three out of six : 6

(i) Explain Vitamin-B complex

(ii) Describe disaccharide

(iii) Duplication types of chromosomal mutation

(iv) Describe Recon and Cistron

(v) Lock and key theory of enzyme

(vi) Any one theory of carsinogenesis.

(b) Write any three out of six : 9

(i) Importance of vitamins

(ii) Factors affecting on enzymes

(iii) Polynucleotide

(iv) Colour blindness as hereditary trait

(v) Genes affecting man's intelligency

(vi) Centrifuge and centrifugation.

(c) Write any two out of five : 10

(i) Translocation type chromosomal mutation

(ii) Radiations as mutagenic agents

(iii) pH meter

(iv) Physical and chemical properties of carbohydrates

(v) Characteristics of cancer cells.

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