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**5 SEM TDC ANTH M 2**

**2018**

( November )

ANTHROPOLOGY

( Major )

Course : 502

**( Human Genetics )**

*Full Marks* : 80

*Pass Marks* : 32/24

*Time* : 3 hours

*The figures in the margin indicate full marks for the questions*

**1.** In each of the following statements, one is correct. Choose the correct one : 1×8=8

*(a)* The fluid-filled space within a cell and surrounding the nucleus is known as

*(i)* chromatin

*(ii)* plasma membrane

*(iii)* cytoplasm

*(iv)* nuclear envelope

(b) Parkinson disease is caused by the loss of a certain population of cells in the

(i) heart

(ii) lungs

(iii) skin

(iv) brain

(c) Which is known as the 'powerhouse' of the cell?

(i) Mitochondria

(ii) Ribosome

(iii) DNA

(iv) RNA

(d) Absence of pigmentation in the skin, hair and iris of the eyes in man is known as

(i) hemophilia

(ii) albinism

(iii) cystic fibrosis

(iv) Huntington's disease



( Continued



(e) The vast majority of Native Americans have type

(i) O blood

(ii) B blood

(iii) AB blood

(iv) A blood

(f) The gene that causes Huntington's disease is located on

(i) chromosome 3

(ii) chromosome 4

(iii) chromosome 5

(iv) chromosome 6

(g) A typical protein may be made up of a chain of

(i) 200 amino acids

(ii) 300 amino acids

(iii) 400 amino acids

(iv) 500 amino acids

(h) Hemophilia is the most well-known

(i) X-linked disorder

(ii) Y-linked disorder

(iii) autosomal dominant disorder

(iv) None of the above



( Turn Over )

2. Write short notes on any *four* of the following : 4×4=16

   (a) Significance of meiosis

   (b) Miscegenation

   (c) MN blood group

   (d) Partial sex linkage in man

   (e) Identical and nonidentical twins

3. What do you mean by human genetics? How is human genetics related to anthropology? Discuss briefly the scope of human genetics. 2+3+9=14

   *Or*

   Define gene. Explain the structure of DNA as proposed by Watson and Crick with diagrams. 3+11=14

4. What do you mean by single factor inheritance? Discuss the inheritance patterns of the autosomal dominant inheritance in man with suitable example and pedigree. 3+11=14

   *Or*

   What is polygenic inheritance? How does it differ from multiple allelism? Illustrate your answer with suitable examples. 3+11=14



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5. What is meant by population genetics? Write in brief about the importance of population genetical research in anthropology. 3+11=14

   *Or*

   Define Hardy-Weinberg law. State clearly under what conditions the Hardy-Weinberg law is applicable. Briefly discuss how genetic equilibrium is maintained in a random mating population. 3+4+7=14

6. Mention some of the morphological traits in man. Elaborate if these traits are affected by environment. 3+11=14

   *Or*

   "Man is the product of heredity and environment." Elaborate your answer with illustrations. 14

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