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5 SEM TDC ANTH M 2

2016

(November)

ANTHROPOLOGY

(Major)

Course : 502

(Human Genetics)

Full Marks : 80

Pass Marks : 32 (Backlog) / 24 (2014 onwards)

Time : 3 hours

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

1. In each of the following statements, one is correct out of four alternatives. Choose the correct one :

1×8=8

(a) The term 'genetics' was coined by

(i) William Bateson

(ii) T. H. Morgan

(iii) C. Darwin

(iv) Francis Galton

(2)

- (b) Dominant gene can express in
- (i) homozygous condition
 - (ii) heterozygous condition
 - (iii) hemizygous condition
 - (iv) both homozygous and heterozygous conditions
- (c) Four offsprings of a couple may be different in their ABO blood group, if
- (i) both of the couple heterozygous for A
 - (ii) both of the couple heterozygous for B and A
 - (iii) both of the couple homozygous for B
 - (iv) both of the couple homozygous for A
- (d) Which of the following is quantitative trait?
- (i) Haemophilia
 - (ii) Palm print
 - (iii) Total colour blindness
 - (iv) X_g blood group

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(Continued)

(3)

- (e) Genes do not occur in pairs in
- (i) body cell
 - (ii) gametes
 - (iii) fertilized egg
 - (iv) zygote
- (f) The term 'genome' is used for
- (i) haploid set of chromosome
 - (ii) diploid set of chromosome
 - (iii) polyploid set of chromosome
 - (iv) triploid set of chromosome
- (g) Which of the following characters is not autosomal?
- (i) PTC taste sensitivity
 - (ii) Brachydactylic
 - (iii) Beard and moustache
 - (iv) Hairy ear
- (h) In human beings, multiple genes are involved in the inheritance of
- (i) colour blindness
 - (ii) ABO blood group
 - (iii) skin colour
 - (iv) stature

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(Turn Over)

(4)

2. Write short notes on any four of the following : $4 \times 4 = 16$

- (a) Chromosomal aberration
- (b) Inbreeding and miscegenation
- (c) Polygenic and polymorphic inheritance
- (d) Mode of inheritance of haemophilia
- (e) Pedigree method

3. Give the definition of human genetics. Write about its aim and scope. $2 + 12 = 14$

Or

What is cell division? Write the differences between mitosis and meiosis. $3 + 11 = 14$

4. Discuss DNA as a hereditary unit with illustration. 14

Or

What is single-factor inheritance? Explain with examples. 14

5. What is population genetics? What is Hardy-Weinberg law? How is it used in population genetics? $2 + 2 + 10 = 14$

(5)

Or

What is Hardy-Weinberg law? What are the different conditions to qualify Hardy-Weinberg law? What is genetic equilibrium?

$2 + 4 + 8 = 14$

6. Explain the relative role of heredity and environment in the growth of physical traits of man. 14

Or

How do heredity and environment play role on stature, weight and skin colour? 14
