

K17U 0141

Reg. No. :

Name :

VI Semester B.Sc. Degree (CCSS – Supple./Improv.)
Examination, May 2017
CORE COURSE IN ZOOLOGY
6B10 ZLG : Genetics, Molecular Biology and Biotechnology
(2009-2013 Admns.)

Time : 3 Hours

Max. Weightage : 25

SECTION – A
(Genetics)

I. Answer **any one** of the following : (Weightage 4)

- 1) Explain cytoplasmic inheritance with examples.
- 2) Define mutation. Describe the molecular basis of gene mutation. Also mention the significance of mutation. (Wt : 4×1=4)

II. Answer **any two** of the following : (Weightage 2)

- 3) Give an account on chromosomal aberrations.
- 4) Explain the inheritance of coat colour in rabbit.
- 5) Explain the role of Y chromosome in humans in sex determination.
- 6) What is crossing over ? Give an account on the different factors affecting crossing over. (Wt : 2×2=4)

III. Answer **any three** of the following : (Weightage 1)

- 7) What is test cross ?
- 8) Explain gynandromorphism.
- 9) What are Barr bodies ?
- 10) What are allelic and non-allelic interactions ?
- 11) Explain genic balance theory of sex determination. (Wt : 1×3=3)

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IV. Answer the following : (Weightage 1).

12) Fill in the blanks.

- Skin colour in man is an example for _____
- _____ is an abnormal condition in foetus due to RH incompatibility.
- Mutation theory was put forward by _____
- The hypothesis of inactivation of one X chromosome is _____ (Wt : 1)

SECTION - B
(Molecular Biology and Biotechnology)

V. Answer any one of the following : (Weightage 4)

13) Give an account on recombinant DNA technology.

(Wt : 4x1=4)

14) Explain the mechanism of DNA replication.

VI. Answer any two of the following : (Weightage 2)

15) DNA is the genetic material. Comment on.

16) Explain the different mechanisms of DNA repair.

17) Briefly explain various steps involved in transcription.

(Wt : 2x2=4)

18) Describe southern blotting.

VII. Answer any four of the following : (Weightage 1)

19) What is hybridoma technology ?

20) What is Wobble hypothesis ?

21) Explain mitochondrial genome.

22) What are restriction endo nucleases ?

23) What is gene splicing ?

24) What are artificial chromosomes ?

25) What is reverse transcription ?

26) What is DNA finger printing ?

(Wt : 1x4=4)

27) Match the following : (Weightage 1)

a) Western blot

b) HIV

c) Lambda phage

d) AUG

retrovirus

initiation codon

protein

cistron

vector

(Wt : 1)