JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2023

M. Sc. 1st Semester (Biotechnology)

COURSE CODE(CREDITS): 20MS1BT115 (02) MAX. MARKS: 15

COURSE NAME: GENETICS

COURSE INSTRUCTORS: Dr. Sudhir Kumar MAX. TIME: 1 Hour

Note: (a)*All questions are compulsory.*

(b)Marks are indicated against each question in square brackets. Use of calculator is allowed.

Q1: a) The percentage of cytosine in a double-stranded DNA molecule is 40%. What is the percentage of thymine?

b) Which of the following relations will be true for the percentage of bases in double-stranded DNA and why? i) C + T = A + G ii) C/A = T/G

c) Contrast binary system used in Computer Language Vs language of DNA i.e. ATGC

[1+2+2]

Q2: a) Contrast theory of Gemplam Vs blending inheritance.

b) Red eyed Drosophila female (heterozygous) is crossed with white eyed male. Show the F1 crosses and phenotypes. Explain the type of inheritance.

c) How do autosomal inheritance is different from sex linked inheritance in Drosophila?

[1+2+2]

Q3: a) A dominant phenotype of normal wings of heterozygous Drosophila male (autosomal character) was crossed with normal wings heterozygous Drosophila female. What is the probability of getting 2 out of 05 Drosophila to be with vestigial wings (autosomal recessive character)?

b) What is the probability of 02 out 06 F 1 Drosophila will be born as females after a cross of normal male and female Drosophila parents.

c) What are the important scientific lessons learnt from Mendel's way of doing experiments on pea plant?

[1+2+2]
