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No. of Printed Pages : 2

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Sardar Patel University  
Sy BSc Fourth Semester Examination-2016  
Subject-Genetics

Course No. - US04CGRN01

Course Title- Principles of genetics - II

Time :2.30pm to 5.30pm

Date: 02/05/2016, Monday

Total Marks-70

**Q1 Multiple Choice Questions (one mark each) Attempt all**

10

I Differences in results of reciprocal crosses are found in \_\_\_\_\_ inheritance

- A) Mendelian B) Nuclear C) Cytoplasmic C) All of above

II Unit for distance between two genes is

- A) bp B) cM C) Both A and B D) None of above

III Plastids were discovered by \_\_\_\_\_

- A) Morghan B) Mendel C) Hardy and Weinberg D) Correns and Baur

IV Number of linkage groups in human are

- A) 46 B) 23 C) 22 D) 2n

V Crossing over takes place during

- A) Leptotene B) Pachytene C) Zygotene D) Diplotene

VI ----- is the ultimate source of variation in any character

- A) Linkage B) Mutation C) Both A and B D) All of above

VII Types of linkage in drosophila males are

- A) Incomplete linkage B) Complete linkage C) Both a and B D) None of above

VIII A group of bacterial structural gene that is transcribed together is called \_\_\_\_.

- A) Operon B) Cistron C) Recon D) Muton

IX Wobble hypothesis was proposed by \_\_\_\_\_.

- A) F. Wobble B) F. Crick C) W. Bateson D) J. Watson

X \_\_\_\_\_ coined term mutation

- A) Hugo De Vries B) Morgan C) Mendel D) None of above

**Q2 Short Question (any 6 question x2 marks each)**

12

1 What are Kappa particles in paramecium?

2 What is mutation ? give its classifications

3 What is point mutation and frameshift mutation?

4 Enlist characteristics of cytoplasmic inheritance

5 Differentiate between spontaneous mutation and induced mutation

6 Define Gene and Cistron

7 Show schematically *lac* operon

8 What is the role of Structural genes and Promoter

9 What is Wobble hypothesis

10 Enlist characteristics of Genetic Code

[PTO]

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Q.3 Discuss cytological detection of crossing over (Stern's experiment) [8M]

**OR**

Q.3 Discuss theories and mechanism of crossing over [8M]

Q.4 Discuss incomplete linkage with example [8M]

**OR**

Q.4 Write a detail note on chromosome theory of linkage and significance of linkage [8M]

Q.5 Discuss characteristics of cytoplasmic inheritance with example of Coiling of shell in snail [8M]

**OR**

Q.5 Write short notes on -  
1. Plastid inheritance in *Mirabilis jalapa* [4M]

2. Iojap inheritance in maize [4M]

Q.6 a. Write a note on fine structure of rII locus in T4 phage (Benzer's study) [4M]

b. Write about Cistron, recon and muton [4M]

**OR**

Q.6 a. Write a note on Complementation and recombination test (Classical) [4M]

b. Write a note on Position effect (Bar eye in *Drosophila*) [4M]

Q.7 Write an elaborative note on lac operon [8M]

**OR**

Q.7 Write an elaborative note on tryptophan operon [8M]

Q.8 Write an elaborative note on numerical changes in chromosome [8M]

**OR**

Q.8 Write an elaborative note on structural changes in chromosome [8M]

\*\*\*\*ALL THE BEST\*\*\*\*

— X —  
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