

(22)

SARDAR PATEL UNIVERSITY**B. Sc. (Genetics) – Fifth Semester Examination (CBCS)****Saturday, 3rd November 2018****10:00 a.m. to 1:00 p.m.****US05CGEN06: Human Genetics****Total Marks: 70**

Note: (1) Figures to the right indicate marks.

(2) Draw a neat and labeled diagram, wherever necessary.

Q. 1 Choose the most appropriate answer from the four alternatives given: [10]

- i. The tandem repeat units with 2 – 5 base pair length is called as _____.
 (a) Microsatellites (b) LINE (c) SINE (d) Minisatellite
- ii. The size of human genome is _____.
 (a) 3200 Mb (b) 3.2 billion base pairs (c) 3.2 Gb (d) All of these
- iii. _____ forms the basis of DNA fingerprinting.
 (a) RFLP (b) VNTR (c) RAPD (d) Both (a) and (b)
- iv. The unit of physical map is _____.
 (a) Base pair (b) Centi morgan (c) Centi rays (d) Centimeter
- v. Marfan syndrome is inherited as _____ manner.
 (a) Autosomal recessive (b) X - linked
 (c) Y – linked (d) Autosomal dominant
- vi. Diabetes mellitus is an example of _____ disorder.
 (a) Multifactorial (b) Neurogenetic (c) Monogenic (d) Biochemical
- vii. Plaque and tangles are characteristics of _____.
 (a) Alzheimer's disease (b) Parkinson's disease
 (c) Marfan Syndrome (d) Tay Sach's disease
- viii. Chorionic villus sampling is usually performed during _____ fetal age.
 (a) 6 weeks (b) 9 – 11 weeks (c) 15 – 17 weeks (d) 7 - 8 weeks
- ix. Triple marker test includes _____.
 (a) AFP- Estriol(uE3)- HCG (b) Estriol(uE3) -HCG- inhibin A
 (c) HCG - AFP -inhibin A (d) SAGE- HCG -inhibin A
- x. Deficiency of _____ enzyme causes Phenylketonuria in human.
 (a) Phenylalanine oxidase (b) Phenylalanine hydroxylase
 (c) Phenylalanine carboxylase (d) Phenylalanine deaminase

①

(P.T.O.)

Q.2 Answer any TEN from the following:

[20]

1. What are gene families?
2. What are non-coding sequences? Write its examples.
3. Enlist major categories of repeated DNA sequences.
4. What are contigs?
5. Give an overview of shotgun library.
6. Write importance of cytogenetic maps.
7. What is galactosemia?
8. Write examples of multifactorial disorders.
9. Give an overview of Tay Sach's disease.
10. Write importance of ferric chloride test.
11. Explain term predictive diagnosis.
12. What is MSAFP? Write its significance.

Q.3 Give an overview of human genome project and its importance.

[10]

OR

Q.3 Describe general features of human genome.

[10]

Q.4 (a) Write a note on BAC library.

[5]

(b) Write differences between Physical map and genetic map.

[5]

OR

Q.4 (a) Explain Restriction maps.

[5]

(b) Write differences between Chromosome walking and Chromosome Jumping.

[5]

Q.5 Write notes on : (a) Hemophilia (b) Obesity

[5+5]

OR

Q.5 Explain : (a) Parkinson's disease (b) Sickle cell anaemia

[5+5]

Q.6 (a) Explain importance of prenatal screening of genetic diseases.

[5]

(b) Describe QUAD test.

[5]

OR

Q.6 (a) Write a detail note on Guthrie inhibition assay.

[5]

(b) Discuss on SAGE.

[5]

