



TOPIC: GENETICS

- DNA finger point using Variable Number Tandem Repeats (VNTRs) is based on the observation that
 - every individuals has unique alleles at each VNTR locus.
 - the DNA of VNTR loci is more stable than that of loci which code for proteins
 - VNTR sequence show little variability.
 - VNTR loci are highly polymorphic**
- Choose the incorrect statement regarding the observations drawn from the human genome project.
 - Repetitive sequence are stretches of RNA**
 - Less than 2 per cent of the genome codes for protein.
 - SNPs help in tracing human history
 - Reptitive sequence make up a very large portion of the human genome
- The human chromosome with the highest and least number of genes in them are respectively
 - Chromosome 21 and Y
 - Chromosome 1 and X
 - Chromosome 1 and Y**
 - Chromosome X and Y
- How many statements are correct?
 - Satellite DNA normally does not code for any protein.
 - DNA polymorphism means inheritable mutations and is observed in a population at low frequency
 - DNA from a single cell is enough to perform DNA fingerprinting analysis
 - Size of VNTR carries from 0.1 – 2kb
 - 99.9% of base sequence are same among humans.

(1) Two **(2) Three** (3) Four (4) One
- Which of the following statement is incorrect?
 - Colour blindness occurs in about 8% males and 0.4% females.
 - Affected mother has always affected sons in haemophilia.**
 - Phenylketonuria is an example of pleiotropism.
 - α - thalassaemia is caused due to defective HBA1 and HBA2 genes located on chromosome number 16.
- Read the following statements.
 - In haplo-diploid sex-determination system, the males do not have father and thus cannot have sons, but have a grandfather and can have grandsons
 - In honey bee, workers are developed by the unfertilized eggs by means of parthenogenesis
 - In human skin colour, the effect of each allele is additive
 - In XO type of sex-determination, male have half number of chromosome than the femaleSelect the incorrect statements.
 - I and III (2) II, and III **(3) II, IV** (4) I and IV
- ZW, XO, XY and haplo-diploid type of sex determination is seen in respectively
 - Parrot, cockroach, drosophilia and honey bee.
 - Aptenodytes, grasshopper, Drosophila and Apis
 - Pavo, grasshopper, man and honey bee
 - All of the above**

8. The VNTR belongs to a class of satellite DNA referred to as
 (1) Repetitive DNA (2) Mega-Satellite (3) Mini-Satellite (4) Micro –Satellite
9. In HGP, the last chromosome to be sequenced was the chromosome number _____ in _____:
 (1) 11, May 2003 (2) 20, Jan 2003
 (3) 1, May 2004 (4) 1, May 2006
10. Pick out the correct statements :-
 a. Haemophilia is a sex-linked recessive character
 b. Phenylketonuria is an autosomal dominant gene disorder
 c. Phenylketonuria is an autosomal recessive gene disorder
 d. Sickle cell anaemia is an X-linked recessive gene disorder
 (1) a, b, d correct (2) a, c correct (3) b, c, correct (4) b, d correct
11. Which of the following is not associated with HGP?
 (1) Bio-informatics (2) Cloning vector BAC & YAC
 (3) Automated DNA sequencers (4) VNTR
12. A genetic disorder having 47 chromosome and characterised by short statured with small rounded head but palms are broad with palm crease
 (1) Klinefelter's syndrome (2) Turner's syndrome
 (3) Down's syndrome (4) Edward syndrome
13. The Human Genome Project as megaproject was a 13 year project coordinated by the –
 (1) U.S. Department of Energy. (2) National Institute of Health.
 (3) U.S. Department of Molecular Biology. (4) Both (1) and (2).
14. Fill the gap in following statement
 Human genome has approximately _____ and the cost of sequencing was _____ per base pair.
 (1) 4×10^9 bp, 9 billion US dollars (2) 9 billion US dollars, 4×10^9 bp
 (3) 3×10^9 bp, 3 US dollars (4) 4.7 million bp, 9 billion US dollars
15. In a human genome, single nucleotide polymorphism (SNP) occur in how many locations?
 (1) 1.4 million (2) Two thousand (3) 1.7 lakhs (4) 1.4 billion
16. DNA fingerprinting technique was first developed by:
 (1) Alec Jeffreys (2) Boysen and Jensen
 (3) Schleiden and Schwann (4) Edward and Streptoe