HSSTA Model test May2020
Botany
Answer Key

1. a) Embryo sac / Megaspore, b) Col E1
2. Dairy management.
3. Indian Agricultural Research Institute.
4. Origin of replication / ori
5. c

Any 3 from the above 5 questions (Max 3 marks)

6.

A		B	
a. antigen antibody reaction	-	ELISA	
b. α-lactalbumin	-	Rosie	
c, gene therapy	-	ADA deficiency	
d. Electrophoresis	-	Agarose	(1/2 *4)

7. Exponential growth: dN/dt=(b-d)*N, Logistic growth: dN/dt=rN(K-N/K) (1+1)
8. Organisms whose genes are altered by manipulation. (1)
   Eg; Bt cotton, Rosie, etc (1/2+1/2)
9. Explant: The part of the plant taken for tissue culture. (1)
   Callus : The undifferentiated mass of cell produced from explant. (1)
10. Enzymes which cuts DNA at specific sites within the DNA (1)
    Eg: Eco RI, Hind II, Bam HI, Sal I etc (1/2+1/2)
11. Fertilization involves 2 fusion- 1. Syngamy, 2. Tripple fusion. (1)
    5 nuclei involved. (1)
12. Seasonal: Animals reproduce at a particular period of the year.
    Continuous: Animals which continue to breed throughout their life span. (1+1)
13. Crossing of male and female animals of two different species. (1)
    Mule, Hinny. (1/2+1/2)
14. Standing state: The Total amount of nutrients present in soil at any time (1)
    Standing crop : The total amount living material present in different trophic levels at a given time (1)
15. CNG -More efficient, -Cheaper, -cannot be siphoned, -cannot be adultrated. (1/2*4)
16. - Overcome problems of normal mating.
    - Semen can be transported to where the female is housed.
    -Semen of asingle bull can be used to inseminate many females.
    -Chance to spread of certain diseases can be avoided. (1/2*4)

Any 9 questions from the above 11 questions (Max 18 marks)

17. - Knowledge of the nature and habits of bees
    - Selction of suitable location
    - Catching and hiving of swarms
    - Management of different seasons
    -handling of honey & wax
    (Any 3 Response) (3*1)
18. - Should have Origin of Replication
    - Should have selective markers
    -Should have clonig site, preferably one. (3*1)
19, a) Parasitism – lice on human
    b) mutualism – plant animal interaction
    c) commensalism – Sea animone and clawn fish (3*1)
20. 1) Reduce deforestation, 2) Planting trees/afforestation, 3) slowing down growth of human population, 4) Reduction of emission of green house gases, 5) Reduce use of fossil fuels, 6) Improve the efficiency in use of energy (1/2*6)

Any 3 questions from the above 4 questions (Max 9 marks)