

1. Identify the correct matches for crops and their improved varieties

	Crops	Varieties	Disease
(a)	Wheat	Karan rai	White rust
(b)	Cauliflower	Pusa Shubhra	Leaf and stipe rust
(c)	Cowpea	Pusa Komal	Hill bunt
(d)	Chilli	Pusa Sadabahar	Tobacco mosaic virus and leaf curl

2. Match the Column I with II

Column I

- (a) Pusa Shubhra
- (b) Pusa swarnim
- (c) Pusa sadabahar
- (d) Himgiri

Column II

- (a) Leaf and stripe rust
- (b) Curl blight black rot
- (c) Chilly mosaic virus
- (d) White rust

(a) 1– a, 2–c, 3–d, 4–b

(c) 1– d, 2–c, 3–b, 4–a

3. Virus free plants can be generated through -

(a) Meristem culture

(c) Callus culture

(b) 1– b, 2–d, 3–c, 4–a

(d) 1– a, 2–b, 3–d, 4–c

(b) Somatic hybridisation

(d) Micropropagation

4. In mung bean, resistance has been developed by mutation against

(a) Downy mildew

(c) Yellow mosaic virus, powdery mildew

(b) Powdery mildew

(d) Bacterial blight

5. Pusa Sawani is a variety of

(a) Wheat

(c) Cauliflower

(b) Okra

(d) Rapeseed Mustard

6. The genetically-modified (GM) brinjal in india has been developed for

(a) Enhancing shelf life

(c) Drought-resistance

(b) Enhancing mineral content

(d) Insect-resistance

7. Antinutritional factor present in Rapeseed and Mustard oil cakes is

(a) Glucosinolates

(c) Isoflavonoids

(b) Cyanogenic glycolipids

(d) Cyanoalanine

8. "Jaya" and "Ratna" developed for green revolution in India are the varieties of

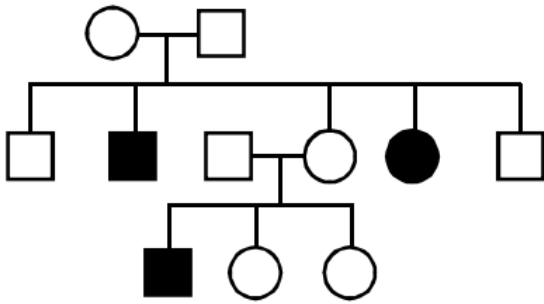
(a) Maize

(c) Wheat

(b) Rice

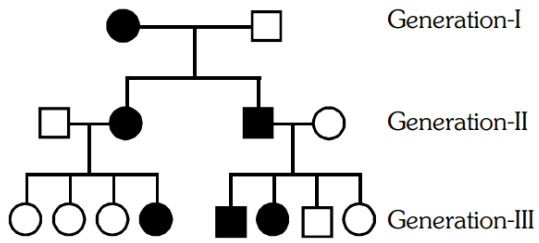
(d) Bajra

9. Hybrid vigour is best maintained in vegetatively reproducing plants because they are
- (a) Resistant to diseases
 - (b) Easily propagated
 - (c) With long life span
 - (d) Little liable to lose vigour due to absence of sexual reproduction.
10. Single cell protein (SCP) is commercially produced by
- (a) Spirulina & chlorella
 - (b) Yeast and *Fusarium graminearum*
 - (c) Saw dust & chlorella
 - (d) Yeast & spirulina
11. Which technique can be helpful in over-coming hybridisation barrier?
- (a) Shoot tip culture
 - (b) Embryo rescue
 - (c) Protoplast fusion
 - (d) both 2 and 3
12. The liquid wax is obtained from
- (a) Sperm whale oil (Spermaceti)
 - (b) Jojoba (*Simmondsia Chinensis*)
 - (c) Both (a) and (b)
 - (d) Blue whale oil
13. Jojoba yields wax for cosmetics from its
- (a) Stem
 - (b) Leaves
 - (c) Seeds
 - (d) Fruit pulp
14. Which one is beverage plant
- (a) *Ilex paraguriensis*
 - (b) *Catha edulis*
 - (c) *Poullinia cupana*
 - (d) All the above
15. IR-36 was developed through breeding of
- (a) Six rice varieties and *Oryza nivara*
 - (b) 13 rice varieties and *Oryza nivara*
 - (c) *Oryza sativa* and *O. indica*
 - (d) *Oryza indica* and *O. nivara*
16. At a particular locus, frequency of 'A' allele is 0.6 and that of 'a' is 0.4. What would be the frequency of heterozygotes in a random mating population at equilibrium –
- (a) 0.24
 - (b) 0.16
 - (c) 0.48
 - (d) 0.36
17. Family has 9 girls, Probability of son at 10th birth is :-
- (a) 50%
 - (b) 100%
 - (c) 25%
 - (d) 75%
18. Given below is the pedigree of sickle cell anaemia, in a family In this the RBC of both parents will be –



- (a) Normal
 (b) Sickle shaped
 (c) Both normal & sickle shaped
 (d) Cannot be determined
19. An offspring of two homozygous parents differing from one another by alleles at only one gene locus is known as :-
 (a) Back cross
 (b) Monohybrid
 (c) Dihybrid
 (d) Trihybrid
20. Mrs. verma has a autosomal gene pair 'Bb' and she contain x-linked gene 'd' both on of her xchromosome. What is the percentage of gamete which contain 'bd' genes :-
 (a) 1/2 or 50%
 (b) 1/4 or 25%
 (c) 3/4 or 75%
 (d) 1 or 100%
21. "When two pairs of traits are combined in a hybrid, segregation of one pair of characters is independent of the other pair of characters". This explains-
 (a) Law of dominance
 (b) Law of segregation
 (c) Law of independent assortment
 (d) Postulate of paired factors
22. Out of three characters on chromosome no. 4, two characters indicate linkage and not mentioned by Mendel. These characters were -
 (a) Pod form - stem length
 (b) Pod form - pod position
 (c) Pod form - pod colour
 (d) Pod position - stem length
23. If $Aabb \times aaBb$, then genotypic ratio of its progeny will be :-
 (a) 9 : 3 : 3 : 1
 (b) 1 : 2 : 1
 (c) 1 : 1 : 1 : 1
 (d) 4 : 1

24. In man, gene producing the disease phenyl ketonuria also produces a number of abnormal phenotypic traits, which are collectively syndrome. This gene results mental retardation, widely spaced incisors, pigmented patches on the skin and excessive sweating such types of genes are called
- (a) Polygene
 - (b) Pleiotropic gene
 - (c) Lethal gene
 - (d) Supplementary gene
25. Grain colour in wheat is determined by three pairs of polygenes. Following cross AABBCc (dark colour) x aabbcc (light colour), in F₂ generation what proportion of the progeny is likely to resemble either parent ?
- (a) None
 - (b) Less than 5 per cent
 - (c) One third
 - (d) Half
26. A test cross of F₁ flies +a/+b produced the following offspring ++/ab = 9 ab/ab = 9 +b/ab = 41 a+/ab = 41 What will be distance between linked gene :-
- (a) 82 cM
 - (b) 18 cM (cis)
 - (c) 20 cM
 - (d) 18 cM (trans)
27. Depending upon the distance between any two genes which is inversely proportional to the strength of linkage, cross overs will vary from :-
- (a) 50-100%
 - (b) 0-50%
 - (c) 75-100%
 - (d) 100-150%
28. In Drosophila the XXY condition leads to femaleness whereas in human beings the same condition leads to Klienfelter's syndrome in male. It proves
- (a) In human beings Y chromosome is active in sex determination
 - (b) Y chromosome is active in sex determination in both human beings and Drosophila
 - (c) In Drosophila Y - chromosome decides femaleness
 - (d) Y chromosome of man has genes for syndrome
29. Theoretically a normal phenotype is expressed when a particular substrate transform in to product but in which of following condition phenotype may be affected-
- (a) When the modified allele produce normal enzyme
 - (b) When the modified allele produce a non functional enzyme
 - (c) When the unmodified allele produce no enzyme
 - (d) All the above
30. A pedigree is shown below for a disease that is autosomal dominant. The genetic make up of the first generation is



- (a) AA, Aa
- (b) Aa, aa
- (c) Aa, AA
- (d) Aa, Aa

1. (d)
2. (b)
3. (a)
4. (c)
5. (b)
6. (d)
7. (a)
8. (b)
9. (d)
10. (b)
11. (d)
12. (c) Jojoba plant seeds contain 50% liquid wax, which is similar to spermaceti. This was originally used in cosmetic and high performance lubricants.
13. C
14. D
15. (b) Gurdev S. Khush crossed 13 varieties of rice from *Oryza nivara* to develop IR – 36 which was resistant to grassy stunt virus.
16. (c)
17. (a)
18. (c)
19. (b)
20. (a)
21. (c)
22. (a)
23. (c)
24. (b)
25. (b)
26. (d)
27. (b)
28. (a)
29. (b)
30. (b)