



Strategies for Enhancement in Food Production Important Questions With Answers

NEET Biology 2023

1. Which one of the following is a breed of cattle?
a) **Ayrshire** b) Ghagus c) Kadaknath d) Scampi

Solution : -

Ayrshire is an exotic breed of cattle from Scotland.

2. Micropropagation is
a) **propagation of microbes in vitro** b) propagation of plants in vitro c) propagation of cells in vitro
d) growing plants on smaller scale

Solution : -

Micropropagation is the in vitro propagation of plants by rapidly multiplying stock plant material to produce a large number of progeny plants (clone), using modern plant tissue culture methods.

3. Which of the following animal is not included in livestock?
a) Pig b) Buffalo c) Goat **d) Rhinoceros**
4. Which of the following should be used as an explant to generate a disease free plant?
a) Anther b) Ovary cell **c) Shoot tip** d) Young embryo

Solution : -

Although the plant is infected with a virus, the meristem (apical and axillary) is free of virus. Hence, one can remove the meristem (shoot tip) and grow it in vitro to obtain virus-free plants.

5. By which method was a new breed, Hisardale, of sheep formed by using Bikaneri ewes and Marino rams?
a) **Crossbreeding** b) Inbreeding c) Outcrossing d) Mutational breeding

Solution : -

Cross-breeding is the process where the breeding between the two individuals of different species takes place. "Hisardale" is a new breed of sheep developed by crossing Bikaneri ewes and Marino rams in Punjab.

6. The most abundant sources of SCP on earth is
a) Chlorella **b) Spirulina** c) Scenedesmus d) Pulses
7. To obtain virus - free healthy plants from a diseased one by tissue culture technique, which part/part of the diseased plant will be taken _____.
a) Apical meristem only b) Palisade parenchyma **c) Both apical and axillary meristems**
d) Epidermis only

Solution : -

To obtain virus-free healthy plants from diseased one by tissue culture technique, both apical and axillary meristem will be taken. Because this region has strong interferon activity. Meristematic tissue forms a protective covering around themselves which is non-penetrable for pathogens.

8. Match the terms given in column I with their descriptions given in column II and select the correct option from the codes given below.

Column I	Column II
A. Out-crossing	(i) Mating of closely related individuals within the same breed
B. Interspecific hybridisation	(ii) Mating of animals of same breed but having no common ancestors on either side of their pedigree for 4 - 6 generations.
C. Cross-breeding	(iii) Mating of animals of two different species
D. Inbreeding	(iv) Mating of animals belonging to different breeds

- a) **A-(ii), B-(iii), C-(iv), D-(i)** b) A-(iii), B-(ii), C-(iv), D-(i) c) A-(iv), B-(ii), C-(iii), D-(i)
 d) A-(ii), B-(iv), C-(iii), D-(i)
9. Which one of the following is not true about antibiotics:
 a) First, antibiotic was discovered by Alexander Fleming.
 b) The term 'antibiotic' was coined by S.Waksman in 1942.
c) Each antibiotic is effective only against one particular kind of germ .
 d) Some persons can be only against one particular kind of germ.
10. The microorganism grown on molasses is used for production of citric acid in industries?
a) Saccharomyces b) Rhizopus niger c) Aetobacter d) Lactobacillus
11. Biogas is the mixture of gases produced by the microbial activity. The type of the gas produced depends upon-
 a) type of microbes b) type of organic substrate/waste c) size of digester **d) 1 & 2 both**
12. A mule is produced by the interspecific hybridisation between



- a) Hisardale and merino rams **b) male donkey and a mare** c) female donkey and a male horse
 d) Merino ram and Bikaneri ewe.

Solution : -

A mule is produced by the interspecific hybridisation between male donkey and a female horse (male). In interspecific hybridisation, male and female animals of two different related species are mated. In some cases, the progeny may combine desirable features of both the parents, and may be of considerable economic value.

13. **Assertion:** In tissue culture, whole plant can be produced from plant cell.
Reason: The capacity to generate a whole plant from any cell/explant is called totipotency
 a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false. d) If both assertion and reason are false

14. Yeast is used in the production of:-

a) **Bread and beer** b) Cheese and butter c) Citric acid and lactic acid d) Lipase and pectinase

15. A petroleum plant is :

a) **Euphorbia Lathyrus** b) Acacia arabica c) Pinus Roxburgh d) Prosopis cineria

16. High milk yielding cross bred Frieswal cow is the product of

a) Brown Swiss × Sahiwal b) **Friesian × Sahiwal** c) Holstein × Tharparkar d) Brown Swiss × Red sindhi.

17. Given below are four statements (A-D) each with one or two blanks. Select the option which correctly fills up the blanks in any two statements.

(A) Multiple ovulation ____ (i) ____ transfer technology is for ____ (ii) ____ improvement.

(B) In it a cow is administered ____ (i) ____ to induce follicular maturation and ____ (ii) ____ ovulation.

(C) Instead of one egg per cycle, ____ (i) ____ eggs are produced through it.

(D) The fertilised ____ (i) ____ at ____ (ii) ____ celled stages are recovered non-surgically and transferred to surrogate mothers

a) (A)-(i) zygote, (ii) pureline; (B)-(i) oestrogen, (ii) poly b) (A)-(i) embryo, (ii) herd; (D)-(i) zygote, (ii) 4-6

c) (C)-(i) 6-8; (D)-(i) eggs, (ii) 4-8 d) **(B)-(i) FSH, (ii) super; (C)-(i) 6-8**

18. Read the following statement having two blanks (A and B)

"A drug used for ____ (A) ____-patients is obtained from a species of the organism ____ (B) ____-."The one correct option for the two blanks is:

a)

Blank-A Blank-B

AIDS -Pseudomonas

b)

Blank-A Blank-B

Heart -Penicillium

c)

Blank-A

Organ-transplant

Blank-B

-Trichoderma

d)

Blank-A Blank-B

Swine flu -Monascus

19. A patient brought to a hospital with myocardial infarction is normally immediately given

a) Cyclosporin -A b) statins c) Penicillin d) **Streptokinase**

20. Select the option showing the correct sequential steps to produce a new genetic variety of a crop.

a)

Selection of parents → Hybridisation of selected parents → Germplasm collection → Selection of superior recombinants → Testing and release of new varieties

b)

Germplasm collection → Selection of parents → Hybridisation of selected parents → Selection of superior recombinants → Testing and release of new varieties

c)

Selection of superior recombinants → Germplasm collection → Hybridisation of selected parents → Selection of parents → Testing and release of new varieties

d)

Germplasm collection → Selection of parents → Hybridisation of selected parents → Testing and release of new varieties → Selection of superior recombinants

21. Himgiri Variety of wheat is resistant to

a) White rust b) Black rot c) Bacterial blight d) **Leaf and stripe rust**

22. Which of the following shows the correct sequence of steps of plant tissue culture?

a) Sterilisation → Hardening → Selection of explant → Inoculation → Regeneration → Plantlet transfer

b) Selection of explant → Inoculation → Regeneration → Sterilisation → Hardening → Plantlet transfer

c) **Selection of explant** → **Sterilisation** → **Inoculation** → **Regeneration** → **Hardening** → **Plantlet transfer**

d) Hardening → Sterilisation → Selection of explant → Inoculation → Regeneration → Plantlet transfer

23. The term 'apiculture' refers to

- a) tissue culture b) pisciculture **c) bee-keeping** d) animal-keeping.

24. High yielding grain crop of world is

- a) Maize** b) barley c) Wheat d) Rice

25. The term "breed" refers to

- a) a group of animals not related by descent but similar in most characters
b) a group of animals related by descent and similar in most characters
c) a group of animals related by descent but have almost different characteristics
d) a group of animals neither related by descent nor have similar characteristics.

Solution : -

Breed is a group of animals related by descent and similar in most characters like general appearance, features, size, configuration, etc.

26. The most likely reason for the development of resistance against pesticides in insects damaging a crop is _____.

- a) random mutations** b) genetic recombination c) directed mutations d) acquired heritable changes

Solution : -

For Darwin, resistance to pesticides has a genetic basis in the wake of presence of certain alleles. In the presence of pesticides, the insects devoid of the allele for resistance die while the ones having them survive. They are selected by nature.

27. In honey, the main constituent is:

- a) calcium **b) sugar** c) protein d) water

Solution : -

The composition of honey is levulose (sugar) -38.9%, dextrose (sugar) - 21.28%, maltose and other sugars - 8.81%, enzymes and pigments - 2.21%, ash - 1.0%, water - 17.20%.

28. Beewax is the secretion of abdominal glands of

- a) drones **b) worker bees** c) queen bees d) worker and queen bees

29. Triticale has been evolved by intergeneric hybridisation between _____.

- a) wheat and rye** b) wheat and rice c) rice and maize d) wheat and Aegilops

Solution : -

Triticale is a man made cereal produced by crossing two genera wheat (Triticum) and rye (Secale). Hexaploid Triticale was obtained by crossing Triticum durum and Secale cereale.

30. During the formation of bread it becomes porous due to release of CO₂ by the action of:-

- a) Yeast** b) Bacteria c) Virus d) Protozoans

31. The new varieties of plants are produced by _____.

- a) selection and hybridisation** b) selection and introduction c) mutation and selection
d) introduction and mutation

Solution : -

The new varieties of plants are produced by selection and hybridisation. In hybridisation, two or more plants of unlike genotype are crossed to get offsprings with new desirable combinations of characters as a result of genetic recombination.

32. The term aquaculture means

a) Inland fisheries b) Aspergilosis c) marine fisheries **d) Both (1) & (3)**

33. Which of the following are edible marine fishes?

a) Catla, Rohu, clarias **b) Hilsa, Mackerels, pomfrets** c) Heteropneustes, wallago, calta
d) Labeo, calbasu, singhi

34. Taichung Native - 1 variety of rice was developed in

a) Taiwan b) Japan c) Mexico d) America

35. Somaclones are

a) somatic hybrids **b) genetically identical to the original plant** c) used to recover disease free plants
d) sterile plants

Solution : -

Somaclones are genetically identical plants developed from any part of a plant by tissue culture micropropagation.

36. **Assertion:** Breeding, weeding, feeding and heeding are essential methods for livestock production.

Reason: Livestock management deals with processes and systems that increase yield and improve quality of products.

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b) If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false. d) If both assertion and reason are false.

37. The biggest constraint of plant breeding is

a) availability of desirable gene in the crop and its wild relatives b) infrastructure c) trained manpower
d) transfer of genes from unrelated sources.

Solution : -

Conventional plant breeding results in open-pollinated varieties (OP) or hybrid varieties which had a tremendous impact on agricultural productivity over the last decades. Conventional plant breeding also has its limitations. First, breeding can only be done between two plants that are sexually compatible with each other. This limits the new traits that can be added to those that already exist in a particular species. Second, when plants are crossed, many traits that have undesirable effects on potential yield are transferred along with the trait/s of interest.

38. In virus-infected plants the meristematic tissues in both apical and axillary buds are free of virus because

a) the dividing cells are virus resistant b) meristems have anti viral compounds
c) the cell division of meristems are faster than the rate of viral multiplication
d) viruses cannot multiply within meristem cell(s).

39. Which of the following crops have been brought to India from new world?

a) Cashewnut, Potato, rubber b) Mango, tea c) Tea, rubber, mango d) Coffee

Solution : -

Rubber Crops, Cashewnut, potato have been brought from New World to India.

40. Which one of the following is a case of wrong matching.

a) Somatic hybridisation - Fusion of two divers cells **b) Vector DNA -Site for t - tRNA synthesis.**
c) Micropropagation - in vitro production of plants in large numbers.
d) Callus - Unorganised mass of cell produced in tissue culture

Solution : -

Vector DNA- Site for tRNA synthesis. This is wrong matching. Vector is a DNA molecule which is used as vehicle to carry foreign genetic material into desired cell. The IRNA is synthesised in the nucleus on DNA template

41. In tissue culture medium, the embryoids formed from pollen grains is due to _____.
- a) **cellular totipotency** b) organogenesis c) double fertilisation d) test - tube culture

Solution : -

Cellulartotipotency is the ability, shown by various living cells to form all types of tissue that constitute the mature organism.

42. Heterosis can be defined as
- a) **When F₁ phenotype is superior to both parents**
- b) Only when F₁ phenotype resembles both parental phenotype c) Both (1) & (2)
- d) Production of intersepecific hybrids only

43. Turnip mosaic disease is caused by
- a) bacteria b) **viruses** c) nematodes d) fungi

Solution : -

Turnip mosaic disease is caused by Turnip mosaic virus.

44. The dwarf wheat varieties brought from Mexixo into india were
- a) Sonalika and ratna b) Sharbati Sonora and Pusa Lerma c) **Sonora - 64 and Lerma Roja - 64**
- d) Jaya and sonalika

45. A good breed of cattle means
- a) **It should have high yielding potential** b) It should have resistance to diseases
- c) It should consume less amount of water 12 d) Both (1) & (2)

46. **Assertion:** Phenotypic superiority of hybrid over either of its parents in one or more traits is termed hybrid vigour.
Reason: Suppression of expression of recessive harmful genes occurs in heterozygotes.
- a) **If both assertion and reason are true and reason is the correct explanation of assertion.**
- b) If both assertion and reason are true but reason is not the correct explanation of assertion.
- c) If assertion is true but reason is false. d) If both assertion and reason are false.

Solution : -

Plant breeding exploits the phenomenon of hybrid vigour or heterosis. It is the phenotypic superiority of the hybrid over either of its parents in one or more traits. These hybrids generally have greater strength and resistance to disease and larger life span than either parents. This may be due to suppression of expression of harmful recessive genes that are expressed only in homozygous conditions.

47. Aquaculture is the rearing and management of
- a) molluscs and crustaceans b) only freshwater fishes
- c) **economically useful aquatic plants and animals** d) only aquatic plants

Solution : -

Aquaculture is the branch of science which deals with the culturing and rearing of freshwater organisms like fish and prawn. It involves production of all types of aquatic organisms in water bodies from which economically important substances are obtained.

48. Fill the blanks in the following statements by selecting the correct option.
- (i) All hybrids of poultry are produced by _____ inbred stocks.
- (ii) Super hybrids are obtained when genetically _____ parents are used in the cross.
- (iii) A _____ is produced from a cross between female horse (male) and male donkey
- a) (i) mating, (ii) same, (iii) mule b) (i) crossing, (ii) same, (iii) hinny c) **(i) crossing, (ii) different, (iii) mule**
- d) (i) mating, (ii) different, (iii) hinny

49. Hisardale is a new breed of sheep developed in Punjab by crossing
a) Rhode Island ram and White leghorn ewe b) Cochin ram and Ghagus ewe
c) Merino ram and Bikaneri ewe d) Assel ram and White leghorn ewe

50. Match column I (crop) with column II (corresponding disease resistant variety) and select the correct option from the given codes.

Column I	Column II
A. Cowpea	(i) Himgiri
B. Wheat	(ii) Pusa Komal
C. Chilli	(iii) Pusa Sadabahar
D. Brassica	(iv) Pusa Swarnim

- a) **A-(ii), B-(iv), C-(i), D-(iii)** b) A-(i), B-(iii), C-(iv), D-(ii) c) A-(iv), B-(ii), C-(iii), D-(i)
d) **A-(ii), B-(i), C-(iii), D-(iv)**

