



## BIOLOGY

### VMC MODULES ENGLISH

# STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

#### Fundamental

1. Animal husbandry deals with

A. The care and breeding of livestock like cows, buffaloes, pigs, horses, cattle, sheep, camels, goats, etc, that are useful to humans.

B. Poultry farming

C. Fisheries

D. All of the above

**Answer: D**



**Watch Video Solution**

**2. Fisheries include rearing, catching and selling of**

A. Fish

B. Shell- fish

C. Crustaceans (prawns,crabs)

D. All of the above

**Answer: D**



**Watch Video Solution**

**3.** The management of animals for milk and its products for human consumption is called

- A. Fisheries
- B. Apiculture
- C. Sericulture
- D. Dairying

**Answer: D**



**Watch Video Solution**

4. Bee-keeping is called

- A. Apiculture
- B. Sericulture
- C. Silviculture
- D. Pisciculture

**Answer: A**



**Watch Video Solution**

5. Honey bee species reared most widely in india is

- A. Apic indica
- B. Apidorsata

C. *Apis mellifera*

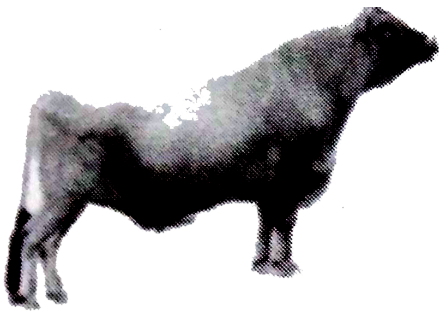
D. *Apis florae*

**Answer: A**



**Watch Video Solution**

6. The following figure shows the improved breed of cattle and chickens where



(a)



(b)

A. a- jersey, b-Rhode island

B. a-Leghorn, b-Jersey

C. a-Rhode island , b-Leghorn

D. a-jersey, b-Leghorn

**Answer: D**



**Watch Video Solution**

7. Biological principles as applied to animal husbandry and food production. Which of the following technique is going to play a pivotal role in further enhancing food production ?

A. Tissue culture technique

B. Embryo transfer technique

C. Both 1 and 2

D. None of the above

**Answer: C**



**Watch Video Solution**

**8.** Contribution to the world farm produce by india and china is

A. 0.25

B. 0.5

C. 0.1

D. 0.7

**Answer: A**



**Watch Video Solution**

9. What are the the strategies for enhancement in food production.

Animal husbandry

(ii) Plant breeding

(iii) Embryo transfer technology

(iv) Tissue culture technique

A. I,ii and iii are true

B. only iii is incorrect

C. All are correct

D. I and iii are correct

**Answer: C**



**Watch Video Solution**



10. Hallikar, a draught breed of cattle occurs in

A. A.P

B. M.P

C. Karnataka

D. Gujarat.

**Answer: C**



**Watch Video Solution**

11. Who initiated collaboration with Norman borlaug which culminated in green revolution in india ?

A. Steward

B. Dr Panchanan Maheshwari

C. M.S . Swaminathan

D. RamDeoMisra

**Answer: C**



**Watch Video Solution**

**12.** The name of Norman Borlaug is associated with

A. White revolution

B. Green revolution

C. Bule revolution

D. Yellow revolution

**Answer: B**



**Watch Video Solution**

**13.** Super ovulation and embryo transplantation are meant for improving

- A. Human race
- B. Livestock
- C. Poultry
- D. Plants

**Answer: B**



**Watch Video Solution**

**14.** Ranikhet disease is associated with :

A. Honey Bee

B. Hens

C. Fishes

D. pigs

**Answer: B**



**Watch Video Solution**

**15.** The young chicken raised specially for meat are called.

A. Broilers

B. Pullets

C. Cockerels

D. Hen

**Answer: A**



**Watch Video Solution**

**16.** What approaches have to be applied to achieve improvement in quality and productivity of animals ?

A. Conventional practices

B. Artificial insemination

C. MOET

D. All of the above

**Answer: D**



[Watch Video Solution](#)

**17. MOET stands for**

- A. Multiple Ovulation Egg Transfer Technology
- B. Multiple Ova and Embryo Transfer Technology
- C. Multiple Ovulation Embryo Tracer Technology
- D. Multiple Ovulation Embryo Transfer Technology

**Answer: D**



[Watch Video Solution](#)

**18. Which is not true for inbreeding ?**

- A. It causes inbreeding depression after a few generations.
- B. It always increases productivity.
- C. It is used to produce a pure line.
- D. It leads to homozygosity.

**Answer: B**



**Watch Video Solution**

**19.** Hisardale is a new breed of sheep developed in Punjab by crossing

- A. Bikaneri ewes and marino rams
- B. Marino ewes and bikaneri rams
- C. Deccani ewes and bikaneri rams

D. Marino ewes and apennine rams

**Answer: A**



**Watch Video Solution**

**20.** In which method of animal breeding , males and female of different species are mated ?

- A. Cross breeding
- B. Outbreeding
- C. Outcrossing
- D. Interspecific hybridisation

**Answer: D**



**Watch Video Solution**



21. Mating of two varieties of a cattle breed like Red Dane which have no common ancestors on either side of their pedigree up to 4-6 generations is an example for.

- A. Inbreeding
- B. Crossbreeding
- C. Outcrossing
- D. Interspecific hybridisation

**Answer: C**



**Watch Video Solution**

22. MOET is a programme that is used to increase:

- A. Biomass
- B. Herd size
- C. Yield
- D. Disease resistance

**Answer: B**



**Watch Video Solution**

**23. Assertion :** Hisardale is cross breed of sheep.

**Reason :** Hisardale is developed by crossing Bikaneri ewe and Marino ram.

- A. Out- crossing
- B. Inter specific hybridisation

C. Crosssbreeding

D. intra specific hybridisation

**Answer: C**



**Watch Video Solution**

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

(A) Multiple ovulation i transfer teachnology 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-breed,b-LH,c-6 -to 8, d- 8- to16
- B. a- herd, b-FSH, c-8to 16 , d- 16 to 32
- C. a- herd, b- FSH, c- 6 to 8, d- 8 to 16
- D. a- herd, b- FSH, c- 6 to 8, d- 8 to 32

**Answer: D**



**Watch Video Solution**

**25.** Which one of the following products of apiculture is used in cosmetics and polishes?

- A. Royal jelly

B. Wax

C. Honey

D. Both 1 and 2

**Answer: B**



**Watch Video Solution**

**26.** Which part of the tobacco plant is infected by *Meloidogyne incognita*

A. Flower

B. Leaf

C. Stem

D. Root

**Answer: D**



**Watch Video Solution**

**27. Green revolution in india occurred during**

A. 1960s

B. 1970s

C. 1980s

D. 1950s

**Answer: A**



**Watch Video Solution**

**28.** Jaya and ratna developed for green revolution in india are the varieties of

- A. maize
- B. rice
- C. wheat
- D. bajra

**Answer: B**



**Watch Video Solution**

**29.** Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of

A. chilli

B. maize

C. sugarcane

D. wheat

**Answer: D**



**Watch Video Solution**

**30.** Breeding of crops with high levels of minerals vitamins and proteins is called

A. Somatic hybridisation

B. Biofortification

C. Biomagnification



## D. Micropropagation

**Answer: B**



**Watch Video Solution**

**31.** Which one of the following is being tried in india as a bio fuel substitue for fossil fuels ?

A. Jatropha

B. Azadirachta

C. Musa

D. Aegilops

**Answer: A**



**Watch Video Solution**

**32.** In maize, hybrid vigour is exploited by

- A. crossing of two inbred parental lines
- B. harvesting seeds from the most productive plants
- C. inducing mutations
- D. bombarding the seeds with DNA

**Answer: A**



**Watch Video Solution**

**33.** Consider the following four measures (1-4) that could be taken to successfully grow chickpea in an area where bacterial blight disease is common.

A. II and III

B. I and II

C. III and IV

D. I and IV

**Answer: C**



**Watch Video Solution**

**34.** Three crops that contribute maximum to global food grain production are

A. Wheat, rice and maize

B. Wheat, rice and barley

C. Wheat, maize and sorghum

D. Rice, maize and sorghum

**Answer: A**



**Watch Video Solution**

**35. Somaclones are obtained by**

A. Genetic engineering

B. Tissue culture

C. Plant breeding

D. Somatic mutations

**Answer: B**



**Watch Video Solution**

**36.** In plant tissue culture, the callus tissues can be regenerated into complete plantlets primarily by altering the concentration of

- A. sugars
- B. vitamins
- C. hormones
- D. amino acids

**Answer: C**



**Watch Video Solution**

**37.** Which part would be most suitable for raising virus-free plants for micrpropagation ?

A. Meristem

B. Node

C. Bark

D. Vascular tissue

**Answer: A**



**Watch Video Solution**

**38.** In a tissue culture media, the resource of the phytohormone is:

A. agar agar

B. glucose

C. micronutrients

D. coconut milk

**Answer: D**



**Watch Video Solution**

**39.** Undifferentiated mass of plant cells grown on nutrient medium is called:

A. callus

B. bud

C. clone

D. scion

**Answer: A**



**Watch Video Solution**

**40.** Heterosis is

- A. Hybrid incompatibility
- B. Hybrid vigour
- C. Hybrid sterility
- D. Inbreeding depression

**Answer: B**



**Watch Video Solution**

**41.** Match the columns for diseases causing agent in plant and select correct option:



**Column I****Column II**

- |   |                  |
|---|------------------|
| (A) Brown rust of wheat,<br>red rot of sugarcane and<br>late blight of potato | (i) Bacteria     |
| (B) Black rot of crucifers  | (ii) Fungi       |
| (C) Tobacco mosaic, turnip mosaic   | (iii) Mycoplasma |
| (D) Yellow mosaic in bhindi   | (iv) Protozoa    |
| (E) Powdery mildew in mung  | (v) Virus        |

A.  $A - i, B - ii, C - iii, D - iv, E - v$

B.  $A - ii, B - i, C - iv, D - v, E - ii$

C.  $A - ii, B - i, C - v, D - v, E - ii$

D.  $A - iii, B - ii, C - i, D - v, E - iv$

**Answer: C**



**Watch Video Solution**

**42. Cryopreservation is:**

A. Preservation of living beings in chemicals

B. preservation through gases

C. preservation at very low temperature

D. Preservation at high temperature

**Answer: C**



**Watch Video Solution**

**43.** Which one of the following option is correct?

A. Option1      *A*                      *B*                      *C*  
Wheat      Pusa Shubhara      Boll worms

B. Option2      *A*                      *B*                      *C*  
Brassica      Pusa Komal      Fruit borer

C. Option3      *A*                      *B*                      *C*  
Wheat      Pusa Komal      Boll worms

D. Option4      *A*                      *B*                      *C*  
Flat beans      Pusa Sem 2      Fruit borer

**Answer: A**



**Watch Video Solution**

**44.** The technique of obtaining large number of plantlets by tissue culture method is called

- A. Organ culture
- B. Micropropagation
- C. Macropropagation
- D. Plantlet culture

**Answer: B**



**Watch Video Solution**

**45.** Which of the following enhances or induces fusion of protoplasts ?

- A. IAA
- B. Gibberellins
- C. Sodium chloride
- D. Polyethylene glycol

**Answer: D**



**Watch Video Solution**

**46.** Somatic embryo can be developed in plant tissue culture from:

- A. a somatic cell

B. single germ line cell

C. any type of fertilised cell

D. anthers

**Answer: A**



**Watch Video Solution**

**47.** The phenomenon that operates in the formation of root or shoot in a callus culture is

A. de-differentiation

B. re-differentiation

C. differentiation

D. rejuvenation

**Answer: C**



**Watch Video Solution**

**48.** Pomato is somatic hybrid between

- A. potato and tomato
- B. poppy and potato
- C. potato and tamarind
- D. poppy and tomato

**Answer: A**



**Watch Video Solution**

**49.** Match the columns and choose the correct option:

**I.**

1. Totipotency

2. Micropropagation

3. Somaclone

4. Somatic hybrid

5. Biofortification

**II.**

(a) Breeding crops with higher levels of nutrients

(b) Plant grown from hybrid protoplast

(c) Producing a large number of plants through tissue culture

(d) Capacity to generate a whole plant from an explant

(e) Plants genetically identical to the original plant

A.  $1 \rightarrow d, 2 \rightarrow c, 3 \rightarrow e, 4 \rightarrow b, 5 \rightarrow a$

B.  $1 \rightarrow a, 2 \rightarrow e, 3 \rightarrow b, 4 \rightarrow d, 5 \rightarrow c$

C.  $1 \rightarrow c, 2 \rightarrow b, 3 \rightarrow e, 4 \rightarrow b, 5 \rightarrow c$

D.  $1 \rightarrow d, 2 \rightarrow e, 3 \rightarrow a, 4 \rightarrow d, 5 \rightarrow c$

**Answer: A**



**Watch Video Solution**

**50.** Lathyrism which is caused by consumption of kesri dal is a disease characterized by:

- A. reproductive failure, susceptibility to diabetes mellitus and skeletal abnormalities
- B. retardation of body growth, precocious puberty and renal dysfunction
- C. mental retardation, delay in the onset of puberty and cardiovascular abnormalities



D. gross skeletal deformation and thinning of collagen  
fibres and fibrils

**Answer: D**



**Watch Video Solution**

**Enable**

1. The spread of bird flu can be prevented by

A. Culling

B. Breeding

C. Separation of infected birds from the flock of  
undiseased

D. Both 1 & 3

**Answer: D**



**Watch Video Solution**

2. Feeding constitutes the major management concern in poultry. It is required for high

A. Egg production only

B. Meat production only

C. Both egg and meat production

D. Feeding of birds in poultry is not prime importance

**Answer: C**



**Watch Video Solution**

3. Which of the following is not an objective of animal breeding?

- A. Increasing yield of milk, eggs, meat , wool etc.
- B. Improving the desirable qualities of animal produce
- C. Slow growth rate
- D. Resistance to various diseases

**Answer: C**



**Watch Video Solution**

4. An out-cross is produced when animals

- A. Within the same breed having common ancestors are mated
- B. Within the same breed having no common ancestors on either side of their pedigree upto 4-6 generations are mated
- C. Of different breeds are mated
- D. of different species are mated

**Answer: B**



**Watch Video Solution**

5. Which of the following is practised to overcome for average productivity in animals w.r.t. milk production, growth rate in

beef cattle etc?

- A. Out- crossing
- B. Inter specific hybridisation
- C. Crosssbreeding
- D. inbreeding

**Answer: A**



**Watch Video Solution**

**6.** Hisardale is a new breed of sheep developed in Punjab by crossing

- A. Bikaneri ewes and marino rams
- B. Marino ewes and bikaneri rams

C. Bikaneri ewes and bikaneri rams

D. Marino ewes and Marino rams

**Answer: A**



**Watch Video Solution**

7. Which of the following statement is incorrect w.r.t. inbreeding?

A. Inbreeding increases homozygosity

B. inbreeding exposes harmful recessive genes that are eliminated by selection

C. Inbreeding helps in accumulation of deleterious alleles and elimination of desirable alleles

D. inbreeding helps in developing a pure- line in animal

**Answer: C**



**Watch Video Solution**

**8. Artificial breeding of cattle is brought about by**

A. Artificial insemination

B. Superovulation and embryo transplantation

C. Interspecific hybridization

D. Both 1 & 2

**Answer: D**



**Watch Video Solution**

9. The hormone injected to cow to induce follicular maturation and superovulation is having \_\_\_\_\_ like activity

- A. Estrogen
- B. progesterone
- C. Testosterone
- D. FSH

**Answer: D**



**Watch Video Solution**

10. MOET has not been practiced in

- a. Cattle b. Sheep
- c. Rabbits d. Poultry



A. Option1 b,c & d

B. Option2 b&d

C. Option3 d only

D. Option4 c only

**Answer: C**



**Watch Video Solution**

**11. Rearing of bees is**

A. Horticulture

B. Apiary

C. Apiculture

D. Poultry

**Answer: C**



**Watch Video Solution**

**12. Which among the following is real product of honey bee?**

A. Honey

B. Pollen

C. Beeswax

D. Propolis

**Answer: C**



**Watch Video Solution**

13. The most common species of honeybee reared commercially in artificial hives in India is

- A. *Apis indica*
- B. *Apis florea*
- C. *Apis mellifera*
- D. *Apis dorsata*

**Answer: A**



**Watch Video Solution**

14. Which one of the following is a marine fish?

- A. Hilsa, Catla, sardines

- B. Sardines, mackeral, rohu
- C. Hilsa, sardines, mackerel
- D. Mackerel, pomfrets, common carp

**Answer: C**



**Watch Video Solution**

**15. Aquaculture does not include**

- A. Useful aquatic plants
- B. Fish
- C. Prawns
- D. Silk

**Answer: D**



**Watch Video Solution**

**16.** To yield milk cow is given

- A. Stibesterol
- B. Sorbitol
- C. Gonadotropin
- D. Prolactin

**Answer: A**



**Watch Video Solution**

17. True line breed refers to

- A. Heterozygosity only
- B. Heterozygosity and linkage
- C. Homozygosity only
- D. Homozygosity and self assortment

**Answer: C**



**Watch Video Solution**

18. Pebrine disease of silkworm is caused by a sporozoan/protozoan which is

- A. Dugesia

B. Monocystis

C. Nosema

D. Tachina flies

**Answer: C**



**Watch Video Solution**

**19.** Which of the following disease is caused by a protozoan Eimeria in fowls resulting in bloody diarrhoea?

A. Fowl cholera

B. Coccidiosis

C. Thrush

D. Ranikhet

**Answer: B**



**Watch Video Solution**

**20.** A cow which give more milk per lactation is evolve into pure line by mating with superior bull of same breed for 4-6 generation. Which type of breeding is being referred to in this case?

- A. Inbreeding
- B. Outbreeding
- C. Cross breeding
- D. Out crossing

**Answer: A**



**Watch Video Solution**





[Watch Video Solution](#)

21. Which of the following is correct to check the inbreeding depression?

A. Artificial hybridisation

B. Cross breeding

C. selected animal should be mated with unrelated superior animals of the same breed

D. Selected animal should be mated with unrelated superior animals of the different breed

**Answer: C**



[Watch Video Solution](#)

22. Shahtoosh is obtained from

- A. Lohi
- B. patanwadi
- C. Chiru
- D. Marwari

Answer: C



Watch Video Solution

23. Match the following

Column-I

Column-II

- |                     |       |                      |
|---------------------|-------|----------------------|
| a. Kashmiri goats   | (i)   | Superior carpet wool |
| b. Tibetan antelope | (ii)  | Pashmina             |
| c. Rabbit           | (iii) | Shahtoosh            |
| d. Sheep (Nali)     | (iv)  | Angoora              |

A. a(ii),b(iv),c(iii),d(i)

B. a(ii),b(iii),c(iv),d(i)

C. a(iii),b(ii),c(iv),d(i)

D. a(iii),b(iv),c(ii),d(i)

**Answer: B**



**Watch Video Solution**

**24.** If a cattle is showing increased respiration and blood mixed foamy discharge from mouth, nose and anus, it is likely to be suffering from

A. Rinderpest

B. Mad cow disease

C. Ranikhet

D. Anthrax

**Answer: D**



**Watch Video Solution**

**25. A queen Honey Bee lays eggs of :**

- A. One type from which all castes develop
- B. Two types, one forming queen and workers and second type forming drones
- C. Three types forming queen, drone and workers
- D. Unfertilized - eggs die while fertilized ones form all castes

**Answer: B**



**Watch Video Solution**

**26.** Hairy leaved cotton is resistant to:

A. Bollworms

B. Sawfly

C. Jassids

D. Stem borer

**Answer: C**



**Watch Video Solution**

27. Which concept helps to overcome Hidden hunger ?

- A. Bio-remediation
- B. Bio-fortification
- C. Bio-control
- D. Bio-fertilizers

**Answer: B**



**Watch Video Solution**

28. Atlas -66 is

- A. Wheat variety
- B. Rice variety

C. Maize variety

D. Potato variety

**Answer: A**



**Watch Video Solution**

**29. The vitamin C enriched varieties released by IARI?**

A. carrots, spinach, pumpkin

B. bitter gourd, bathua, mustard, tomato

C. spinach and bathua

D. broad bean, lablab, French and garden peas

**Answer: B**



**Watch Video Solution**



[Watch Video Solution](#)

**30.** Several vegetable crops that are rich in vitamins and minerals were released by:

- A. IARI
- B. BSI
- C. IRRI
- D. CIMAP

**Answer: A**



[Watch Video Solution](#)

**31.** The iron and calcium enriched varieties released by IARI are:



- A. carrots, spinach, pumpkin
- B. bitter gourd, bathua, mustard, tomato
- C. spinach and bathua
- D. broad bean, lablab, French and garden peas

**Answer: C**



**Watch Video Solution**

**32.** The protein enriched varieties released by IARI:

- A. carrots, spinach, pumpkin
- B. bitter gourd, bathua, mustard, tomato
- C. spinach and bathua
- D. broad bean, lablab, French and garden peas

**Answer: A**



**Watch Video Solution**

**33.** Which of the following statement is not true about somatic embryogenesis

- A. The pattern of development of a somatic embryo is comparable to that of zygotic embryo
- B. Somatic embryos can develop from microspores
- C. Somatic embryo is induced usually by an auxin such as 2,4-D
- D. A somatic embryo develops from a somatic cell

**Answer: B**



[Watch Video Solution](#)

**34.** Tissue culture technique can produce infinite number of new plants from a small parental tissue. The economic importance of the technique is in raising:

- A. genetically uniform population identical to the original parent
- B. homozygous diploid plants
- C. new species
- D. variants through picking up somaclonal variation

**Answer: A**



[Watch Video Solution](#)

**35.** Haploid plant cultures are got from

- A. bud culture
- B. root culture
- C. anther culture
- D. leaf culture

**Answer: C**



**Watch Video Solution**

**36.** Best method to preserve the wild relatives of plants:-

- A. By growing them in natural habitats
- B. Gene library

C. By storing seeds

D. Cryopreservation

**Answer: C**



**Watch Video Solution**

**37.** Which plant breeding step is very tedious and time-consuming

A. Selection and testing of superior recombinants

B. Cross hybridisation among the selected parents

C. Collection of variability

D. Evalution and selection of parents.

**Answer: B**



[Watch Video Solution](#)

**38.** Which tropical canes grown in south india had thicker stems and high sugar content but did not grow well in north India.

- A. *Saccharum barberi*
- B. *Saccharum spontaneum*
- C. *Saccharum robustum*
- D. *Sacchrum officinarum*

**Answer: D**



[Watch Video Solution](#)

**39.** In which crops is the method of mass selection applied

- A. Cross-pollinated
- B. Self-pollinated
- C. Both self and cross pollinated
- D. Potato and sugacane

**Answer: A**



**Watch Video Solution**

**40.** The use of colchicines is involved in production of

- 1) Somaclonal variations
- 2) Haploids

3) Polyploids

4) Hybrids

A. Somaclonal variation

B. Haploids

C. Polyploids

D. Hybrids

**Answer: C**



**Watch Video Solution**

**41.** Who among the following is known as father of Green revolution in India?

A. Norman Borlaug



B. M.S. Swaminathon

C. K. Ramiah

D. H.R. Kashyap

**Answer: B**



**Watch Video Solution**

**42. Match the following:**

Column I	Column II
(A) Brown rust of wheat	(i) Virus
(B) Tobacco mosaic	(ii) <i>Albugo</i>
(C) White rust of crucifer	(iii) <i>Puccinia</i>
(D) Red rot of sugarcane	(iv) <i>Colletotrichum</i>

A.  $A - ii, B - I, C - iii, D - iv$

B.  $A - iv, B - iii, C - ii, D - i$

C.  $A - iii, B - ii, C - I, D - iv$

D.  $A - iii, B - I, C - ii, D - iv$

**Answer: D**



**Watch Video Solution**

**43. Find the incorrectly matched:**

A.	Disease	Casual orgnism
	Black rot of crucifers	Bacteria

B.

(Disease-Brown rust of wheat, Casual orgnism- Fungi)}

C.	Disease	Casual orgnism
	Late blight of Potato	Virus

D.	Disease	Casual orgnism
	Red rot of sugarcane	Fungi

**Answer: C**



**Watch Video Solution**

**44.** Which of the following crop is correctly matched in its resistance to a disease?

- |    | Variety        | Resistance to disease |
|----|----------------|-----------------------|
| A. | Pusa Komal     | Bacterial blight      |
| B. | Pusa Sadabahar | White rust            |
| C. | Pusa Swarnim   | Tobacco mosaic virus  |
| D. | Pusa Shubhra   | Chilli mosaic virus   |

**Answer: A**



**Watch Video Solution**

**45.** Match Column I with column II and select the correct option from the codes given below:

Column I	Column II
A. Flat bean	(i) Pusa Gaurav
B. Okra	(ii) Pusa Sem-2
C. <i>Brassica</i>	(iii) Pusa Sawani

A.  $A - iii, B - ii, C - i$

B.  $A - ii, B - iii, C - i$

C.  $A - iii, B - ii, C - i$

D.  $A - I, B - iii, C - ii$

**Answer: B**



**Watch Video Solution**

**46.** Which of the following statements is correct regarding nectarless cotton varieties?

- A. They do not attract stem sawfly
- B. They are produced by mutation breeding
- C. They do not attract bollworms
- D. They attract cereal leaf beetle

**Answer: C**



**Watch Video Solution**

**47.** Match Column I with column II and select the correct option from the codes given below:

**Column -I**

- A. Cowpea
- B. Wheat
- C. Chilli
- D. *Brassica*

**Column -II**

- (i) Himgiri
- (ii) Pusa komal
- (iii) Pusasadbahar
- (iv) Pusa swarnim

A.  $A - iv, B - ii, C - iii, D - i$

B.  $A - ii, B - I, C - iii, D - iv$

C.  $A - ii, B - iv, C - I, D - iii$

D.  $A - I, B - iii, C - iv, D - ii$

**Answer: B**



**Watch Video Solution**

**48.** Biofortifications refers to the development of crop plants which are

- A. Resistant to disease
- B. Resistant to insect pests
- C. Having improved nutritional quality
- D. Having improved iron content

**Answer: C**



**Watch Video Solution**

**49.** The term explant refers:

- A. A plant part used for tissue culture
- B. An unorganised mass of cells
- C. A complete hybrid plant
- D. A waste part of plant

**Answer: A**



**Watch Video Solution**

**50. Which of the following is an algal source of SCP?**

- A. Candida
- B. Methanobacillus
- C. Chlorella
- D. Saccharomyces

**Answer: C**



**Watch Video Solution**



1. (a) Explain how to overcome inbreeding depression in cattle.

(b) List three advantages of inbreeding in cattle.

(c) Name an improved breed of cattle.

A. Out- crossing

B. cross- breeding

C. Inter specific hybridisation

D. Infra specific hybridisation

**Answer: A**



**Watch Video Solution**

2. Which technique is used to overcome several problems of normal matings ?

- A. MOET
- B. Artificial insemination
- C. Interspecific hybridization
- D. Cross- breeding

**Answer: B**



**Watch Video Solution**

3. Select the marine edible fishes from the following

- (i) Sardines (ii) Common carp
- (iii) Rohu (iv) Hilsa

(v) Pomfrets (vi) Mackerel

(vii) Catla

A. I,ii,iii,v and vi

B. ii,iii,and vii

C. I,iii,iv,vi and vii

D. I,iv,v and vi

**Answer: D**



**Watch Video Solution**

**4. Shell-fish is the member of which taxon ?**

A. Mollusca

B. Crustacea

C. Fishes

D. Insecta

**Answer: A**



**Watch Video Solution**

5. World livestock population present in india and china is about

A. 0.25

B. 0.7

C. 0.5

D. 0.75

**Answer: B**



[Watch Video Solution](#)

6. Artificial insemination means

- A. Introduction of sperms of a healthy donor directly into ovary
- B. Transfer of sperms of a healthy donor to a test tube containing ova
- C. Transfer of sperms of husband to a test tube containing ova
- D. Artificial introduction of sperms of a healthy donor into vagina

**Answer: D**



7. Which are the important components of poultry farm managements ?

- (i) Selection of disease free and suitable breeds
- (ii) Proper and safe farm condition
- (iii) Proper feed and water
- (iv) Hygiene and health care

A. ii,iii,iv

B. I,ii,iv

C. I,iii,iv

D. I,ii,iii,iv

**Answer: D**



8. Animal breeding is an important aspect of animal husbandry. Aims

of animal breeding are

- A. Increasing the yield of animals
- B. Improving the desirable quality of the produce.
- C. To maintain disease free condition
- D. both 1 and 2

**Answer: D**



Watch Video Solution

9. A group of animals which are related by descent and share many similarities are referred to as

A. Species

B. Variety

C. Breed

D. Race

**Answer: C**



**Watch Video Solution**

10. Which technique is used for the herd improvement ?

A. MOET



- B. Artificial insemination
- C. Interspecific hybridization
- D. Controlled breeding experiments

**Answer: A**



**Watch Video Solution**

**11.** In which method of animal breeding , males and female of different species are mated ?

- A. Inbreeding
- B. Out- crossing
- C. Cross- breeding
- D. Interspecific hybridisation

**Answer: D**



**Watch Video Solution**

**12. Read the following statements**

(i) Mule is developed by interspecific hybridisation

(ii) Group of bees is called 'swarms'

(iii) For the herd-improvement cross-breeding is employed

(iv) Bees are the pollinators of apple, brassica, pear and sunflower

(v) In MOET , fertilised egg at 6-8 celled stage is recovered non-surgically

A. I,ii,iii,iv, are true

B. iii,iv,I are false

C. I,ii,iv are true

D. I,ii,iii ,iv and v are true

**Answer: C**



**Watch Video Solution**

**13. MOET is a method of**

A. Fish cultivation

B. Hybridisation of cattle

C. Birth control

D. Cloning of sheep

**Answer: B**



**Watch Video Solution**

14. Which amongst the following is used in raising super milk cows ?

- A. Artificial insemination with pedigree bull
- B. Embryo transplantation
- C. Superovulation of high yielding cow
- D. All of the above

**Answer: D**

15. Fish introduced in india by foreigners is

A. Labeo rohita

B. Mystus singhala

C. pomfret

D. clarius batrachus

**Answer: C**



**Watch Video Solution**

**16. Pisciculture is rearing and production of :**

A. Fishes

B. Birds

C. Reptiles

D. Wool yielding animals

**Answer: A**



**Watch Video Solution**

**17. Identify the edible freshwater teleosts:**

- A. Catla catla
- B. Hilsa hilsa
- C. Rays and skates
- D. sharks

**Answer: A**



**Watch Video Solution**

**18.** Bull semen is stored for artificial insemination in

- A. Ice
- B. Liquid carbon dioxide
- C. Liquid oxygen
- D. Liquid nitrogen

**Answer: D**



**Watch Video Solution**

**19.** Which one is not a marine fish ?

- A. Pomfret
- B. Sardine

C. Rohu

D. mackerel

**Answer: C**



**Watch Video Solution**

**20.** Which is the best breeding method for animals that are below average is production ?

A. Interspecific hybridization

B. Crossbreeding

C. out breeding

D. Out crossing

**Answer: D**





[Watch Video Solution](#)

21. Which statement about breeding is wrong?

- A. Continued inbreeding reduces fertility and productivity
- B. By inbreeding pure lines cannot be evolved
- C. Cross breeding allows desirable qualities of two different breeds to be combined
- D. inbreeding exposes harmful recessive genes that are eliminated by selection

**Answer: B**



[Watch Video Solution](#)

22. In dairy farm management, we deal with processes and systems that increase yield and improve quality of milk. Which of the following statement is incorrect in this regard?

- A. Milk yield is primarily dependent on the quality of milk, therefore selection of high yielding breed is very important
- B. The quality and quantity of fodder provided to cattle do not contribute much to the milk yield
- C. Cleanliness and hygiene both of the cattle and handlers are of paramount importance while milking storage and transport of the milk and its products

D. Regular inspections, visits by a veterinary doctor with proper record keeping help identify and rectify the problems of cattle as early as possible thus ensuring a proper milk yield

**Answer: B**



**Watch Video Solution**

**23. Exotic breed of cattle is**

A. Jersey

B. Leghorn

C. Hisardale

D. None of the above is a breed of cattle

**Answer: A**



**Watch Video Solution**

**24.** Hisardale is a new breed of sheep developed in Punjab by crossing

- A. Out- crossing
- B. In- breeding
- C. Cross -breeding
- D. Interspecific hybridization

**Answer: C**



**Watch Video Solution**

25. Following are the steps in MOET programme for herd improvement in which a cow has been administered hormones with FSH like activity. Arrange steps A to D in their correct sequence in MOET

A. Transferred to surrogate mothers

B. It produces 6-8 eggs instead of one egg which they normally yield per cycle

C. It is artificially inseminated or mated with an elite bull

D. Fertilised eggs at 32 celled stage are recovered non-surgically

A. B,A,C,D

B. C,A,B,D

C. B,C,A,D

D. B,C,D,A

**Answer: D**



**Watch Video Solution**

**26.** The term pisciculture means

- A. Inland fisheries
- B. Aquatic plants
- C. Marine fisheries
- D. Both 1 & 3

**Answer: D**



**Watch Video Solution**

**27.** Blue revolution is enhancement in production of

- A. Milk
- B. Egg
- C. Fish
- D. Wheat

**Answer: C**



**Watch Video Solution**

**28.** The pre-requisite for effective exploitation of natural genes available in the populations is:

- A. Collection and preservation of germplasm

- B. Cross hybridization of selected parents
- C. Testing the superior cultivars in farmers field
- D. Commercialisation of crop varieties

**Answer: A**



**Watch Video Solution**

**29.** The heterozygotes are made homozygotes through:

- A. Continuous out breeding
- B. Continuous inbreeding
- C. continuous mutations
- D. Random mutations



**Answer: B**



**Watch Video Solution**

**30.** *Triticum aestivum* the common bread wheat is

- A. diploid
- B. tetraploid
- C. hexaploid
- D. pentaploid

**Answer: C**



**Watch Video Solution**

**31.** The wheat varieties are:

- A. Sonalika and Kalyan Sona
- B. Jaya and Ratna
- C. IR-8 and Taichung Native -I
- D. Pusa Komal and Pusa swarnim

**Answer: A**



**Watch Video Solution**

**32.** The semi dwarf varieties rice varieties are:

- A. Sonalika and Kalyan Sona
- B. Jaya and Ratna

C. Pusa sawani and Pusa sem 2

D. Pusa Komal and Pusa swarnim

**Answer: B**



**Watch Video Solution**

**33. Saccharum officinarum, the tropical cane is grown in:**

A. Northern India

B. Eastern India

C. Western India

D. Southern India

**Answer: D**



**Watch Video Solution**

**34.** In case of millets, hybrid breeding have led to the development of several high yielding varieties specifically resistant to:

- A. Insects
- B. Drought
- C. Pests
- D. Nematodes

**Answer: B**



Watch Video Solution

**35.** Pusa swarnim is resistant to:

A. Phytophthora

B. Albugo

C. Collectotrichum

D. Xanthomonas

**Answer: B**



**Watch Video Solution**

**36. A non cruciferae variety is:**

A. Karan rai

B. Pusa shubhra

C. Pusa Komal

D. Pusa Gaurav

**Answer: C**



**Watch Video Solution**

**37. Parbhani kranti is a variety of:**

A. Arachis

B. Abelmoschus

C. Apple

D. Allium

**Answer: B**



**Watch Video Solution**

**38.** Pusa A-4 is resistant to:

- A. Aphids
- B. Jassids
- C. Fruit borers
- D. Yellow vein Mosaic virus

**Answer: C**



**Watch Video Solution**

**39.** Plants having similar genotypes produced by plant breeding are called

- A. Autopolyploid

B. Haploid

C. Clone

D. Genome

**Answer: A**



**Watch Video Solution**

**40.** In mung bean, resistance to yellow mosaic virus and powdery mildew were induced by

A. Pusa Komal

B. Pusa Sadabahar

C. Parbhani Kranti

D. Jaya



**Answer: C**



**Watch Video Solution**

**41.** Which of the following Bt crops is being grown in India by the farmers?

A. Maize

B. Cotton

C. Brinjal

D. Soybean

**Answer: B**



**Watch Video Solution**

**42.** Continued self pollination results in

- A. formation of unisexual flowers
- B. gametes loosing vigour
- C. self incompatibility
- D. inbreeding depression

**Answer: D**



**Watch Video Solution**

**43.** Match Column I with column II and select the correct option from the codes given below:

**Column -I**

- A. Cowpea
- B. Wheat
- C. Chilli
- D. *Brassica*

**Column -II**

- (i) Himgiri
- (ii) Pusa komal
- (iii) Pusasadbahar
- (iv) Pusa swarnim

A.  $A - iii, B - iv, C - I, D - ii$

B.  $A - I, B - iii, C - ii, D - iv$

C.  $A - iv, B - iii, C - I, D - ii$

D.  $A - ii, B - iv, C - I, D - iii$

**Answer: A**



**Watch Video Solution**

**44.** Aims of plant breeding are to produce

- A. disease resistant varieties
- B. high yielding varieties
- C. early maturing varieties
- D. all of these

**Answer: D**



**Watch Video Solution**

**45.** 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 antiviral compounds

C. the cell division of meristems are faster than the rate of viral multiplication

D. vireses cannot multiply within meristem cell(s)

**Answer: C**



**Watch Video Solution**

**46.** Several South Indian states raise 2-3 crops of rice annually.

The agronomic feature that makes this possible is because of

A. shorter rice plant

B. better irrigation facilities

C. early yielding rice variety

D. disease resistant rice variety

**Answer: C**



**Watch Video Solution**

**47.** Given below are a few statements regarding somatic .  
Hybridisation .

choose the coorect statements .

I. Protopasts of different cells of the same plants are fused .

II. Protoplasters from cells of different species can be fused .

III. Treatment of cells with cellulase and pectinase is mandatory .

IV. the hybird protoplast contains characters of only one parental protoplast.

A. I and II

B. II and III

C. I and IV

D. III and IV

**Answer: B**



**Watch Video Solution**

**48.** Which one of the following combination would a sugarcane farmer look for in the sugarcane crop?

A. Thick stem, long internodes, high sugar content and disease resistant

B. Thick stem, high sugar content and profuse flowering

C. Thick stem, short internodes, high sugar content, disease resistant

D. Thick stem, low sugar content and disease resistant

**Answer: A**



**Watch Video Solution**

**49.** 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

**Answer: D**



**Watch Video Solution**



50. An explant is

- A. dead plant
- B. part of the plant
- C. part of the plant used in tissue culture
- D. part of the plant that expresses a specific gene

**Answer: C**



Watch Video Solution

51. The principal cereal crop of India is

- A. maize

B. cotton

C. rice

D. oat

**Answer: C**



**Watch Video Solution**

**52.** Which of the following is a correct match between crop, variety and resistance to diseases ?

- |    | Crop     | Variety        | Resistance to disease |
|----|----------|----------------|-----------------------|
| A. | Wheat    | Himgiri        | White rust            |
| B. | Cowpea   | Pusa Komal     | Bacteria blight       |
| C. | Brassica | Pusa Sadabahar | Black rot             |
| D. | Chilli   | Pusa swarnim   | Chilly mosaic virus   |

**Answer: B**



**Watch Video Solution**

**Impeccable**

1. Silk is produced by -

- A. adult moth
- B. cocoon
- C. larva
- D. both 1 and 3

**Answer: C**



**Watch Video Solution**

2. Which among the following is real product of honey bee?

- A. Honey
- B. Propolis
- C. Pollen
- D. Bee wax

**Answer: D**



**Watch Video Solution**

3. Which one of the following constitutes natural silk ?

- A. Nitrogen

B. Magnesium

C. Potassium

D. Phosphorus

**Answer: A**



**Watch Video Solution**

**4. Fish introduced in india by foreigners is**

A. *Mystus singhala*

B. *Clarius batrachus*

C. *Labeo rohita*

D. *Pomphert*

**Answer: D**



**Watch Video Solution**

5. When scientists make an animal superior by view of genotype, introducing some foreign genes in it, is called

- A. immunization
- B. genetic engineering
- C. tissue culture
- D. biotechnology.

**Answer: B**



**Watch Video Solution**

6. The silkworm silk is the product of

- A. salivary gland of the larva
- B. salivary gland of the adult
- C. cuticle of the larva
- D. cuticle of the adult.

**Answer: A**



**Watch Video Solution**

7. High milk yielding varieties of cows are obtained by

- A. use of surrogate mothers
- B. Superovulation and embryo transplantation

C. artificial insemination

D. all of these

**Answer: D**



**Watch Video Solution**

**8. Honey is**

A. alkaline

B. basic after some days

C. acidic

D. neutral

**Answer: C**



**Watch Video Solution**



9. pebrine is a disease of

- A. silk worm
- B. lac insect
- C. honeybee
- D. fish

**Answer: A**



Watch Video Solution

10. The term 'aquaculture' means

- A. Inland fisheries

B. aspergillosis

C. Marine fisheries

D. both 1 and 3

**Answer: D**



**Watch Video Solution**

**11. Hybridoma cells are**

A. only cells having oncogenes

B. product of spore formation in bacteria

C. nervous cells of frog

D. hybrid cells resulting from myeloma cells.

**Answer: D**



**Watch Video Solution**

**12. Life span of worker honey bee**

- A. 6 weeks
- B. 10 weeks
- C. 10 days
- D. 15 days

**Answer: A**



**Watch Video Solution**

**13.** Which statement is correct ?

- A. A indica is largest wild honey bee.
- B. Wax is waste material of honey bee
- C. Workers are the smallest of the three castes
- D. Drone of honey bee is diploid

**Answer: C**



**Watch Video Solution**

**14.** Which of the following fish selectively feed on larva of mosquito : -

- A. Gam bus ia

B. Rohu

C. Clarias

D. Exocoetus

**Answer: A**



**Watch Video Solution**

**15.** Maximum application application of animal cell culture techonology today is in the production of:

A. insulin

B. interferons

C. vaccines

D. edible proteins

**Answer: C**



**Watch Video Solution**

**16.** The world's highly prized wool yielding Pashmina breed is

A. goat

B. sheep

C. goat- sheep cross

D. Kashmir sheep - afghan sheep cross.

**Answer: A**



**Watch Video Solution**

17. Probiotics are

- A. Live microbial food supplement
- B. Cancer inducing microbes
- C. New king of food allergens
- D. safe antibiotics

**Answer: A**



**Watch Video Solution**

18. A viral disease of poultry is

- A. Coryza
- B. New castle disease

C. Pasteurellosis

D. salmonellosis

**Answer: B**



**Watch Video Solution**

**19.** Compared to a bull a bullock is docile because of

A. higher levels of cortisone

B. lower levels of blood testosterone

C. lower levels of adrenaline/noradrenaline in its blood

D. higher levels of thyroxine

**Answer: B**



**Watch Video Solution**



**20.** In cloning of cattle a fertilised egg is taken out of the mother's womb and

- A. in the eight cell stage, cells are separated and cultured until small embryos are formed which are implanted into the womb of other cows
- B. in the eight cells stage the individual cells are separated under electrical field for further development in culture media
- C. from this upto eight identical twins can be produced
- D. the egg is divided into 4 pairs of cells which are implanted into the womb of other cows.

**Answer: A**



**Watch Video Solution**

21. When two unrelated individuals or lines are crossed the performance of  $F_1$  hybrid is often superior to both its parents this phenomenon is called

A. Metamorphosis

B. Heterosis

C. Splicing

D. Transformation

**Answer: B**



**Watch Video Solution**

22. Apiculture is associated with groups of plants

- A. Grapes, Maize, potato
- B. Sugarcane, paddy, banana
- C. Guava, sunflower, strawberry
- D. Pineapple, sugarcane, strawberry

**Answer: C**



**Watch Video Solution**

23. Which is a breed of cattle ?

- A. Ayrshire
- B. Ghagus

C. Kadaknath

D. Scampi

**Answer: A**



**Watch Video Solution**

**24.** Which scientist decoded the language of honey bee and was awarded Nobel prize for his work?

A. Rachael carson

B. D. Muller

C. Carl Von Frisch

D. T.A. Loonis

**Answer: C**



[Watch Video Solution](#)

25. Outbreeding is an important strategy of animal husbandry because it

- A. Is useful in producing purelines of animals
- B. is useful in overcoming inbreeding depression
- C. Exposes harmful recessive genes that are eliminated by selection
- D. Helps in accumulation of superior genes

**Answer: B**



[Watch Video Solution](#)

**26.** Interspecific hybridization is the mating of

- A. animals within same breed without having common ancestors
- B. two different related species
- C. superior males and females of different breeds
- D. more closely related individuals within same breed for 4-6 generations.

**Answer: B**



**Watch Video Solution**

**27.** Among the following edible fishes which one is a marine fish having rich source of omega 3 fatty acids ?

A. Mystus

B. Mangur

C. Mrigala

D. Mackerel

**Answer: D**



**Watch Video Solution**

**28.** Artificial selection to obtain cows yielding higher milk output represents

A. directional as it pushes the mean of the character in one direction

- B. disruptive as it splits the population into two, one yielding higher output and the other lower output
- C. stabilising followed by disruptive as it stabilises the population to produce higher yielding cows
- D. stabilising selection as it stabilises this character in the population

**Answer: A**



**Watch Video Solution**

**29.** Homozygous purelines in cattle can be obtained by

- A. mating of unrelated individuals of same breed
- B. mating of individuals of different breeds



C. mating of individuals of different species

D. mating of related individuals of same breed

**Answer: D**



**Watch Video Solution**

**30. Select the incorrect statement.**

A. inbreeding helps in accumulation of superior genes and elimination of undesirable genes.

B. Inbreeding increases homozygosity

C. Inbreeding is essential to evolve pure lines, in any

D. Inbreeding selects harmful recessive genes that reduce fertility and productivity.

**Answer: D**



**Watch Video Solution**

**31.** Meristem culture is practised in horticulture to get

- A. Somaclonal variation
- B. Haploid
- C. Virus free plants
- D. Slow growing callus

**Answer: C**



**Watch Video Solution**

**32.** Undifferentiated mass of plant cells grown on nutrient medium is called:

- A. Bud
- B. Clone
- C. Callus
- D. Scion

**Answer: C**



**Watch Video Solution**

**33.** Somatic embryo develops in tissue culture from

- A. A somatic cell

B. Single germ line cell

C. Any type of fertilised cell

D. Anthers

**Answer: A**



**Watch Video Solution**

**34.** 'Jaya' and 'Ratna' developed for green revolution in India are the varieties of

A. Maize

B. Wheat

C. Rice

D. Barely

**Answer: C**



**Watch Video Solution**

**35. Himgiri' a variety of Wheat is resistant to**

- A. White rust
- B. Mosaic viruses
- C. Bacterial blight
- D. Leaf and stripe rust

**Answer: D**



**Watch Video Solution**

**36.** Who initiated collaboration with Norman borlaug which culminated in green revolution in india ?

- A. Dr. W. Dudgeon
- B. Dr. Panchanan Maheswari
- C. M.S. Swaminathan
- D. Ram Deo Misra

**Answer: C**



**Watch Video Solution**

**37.** Which is used in biodiesel production

- A. Jatropha

B. Maize

C. Rice

D. Tectona

**Answer: A**



**Watch Video Solution**

**38. Hormone used in suspension culture is:**

A. 2,4-D

B. NAA

C. BAP

D. None of these

**Answer: B**



**Watch Video Solution**

**39.** Tissue culture technique can produce infinite number of new plants from a small parental tissue. The economic importance of the technique is in raising.

- A. Homozygous diploid plants
- B. Development of new species
- C. Variants through picking up of somaclonal variation`
- D. Genetically uniform population identical to original plant.

**Answer: D**





[Watch Video Solution](#)

**40.** Who among the following is known as father of Green revolution in India?

A. Swaminathan

B. B.C. Roy

C. Birbal Sahni

D. P.Maheshwari

**Answer: A**



[Watch Video Solution](#)

**41.** Bomato is somatic hybrid between

- A. Brinjal and Tomato
- B. Beet root and potato
- C. Bean and Tomato
- D. Bean and Potato

**Answer: A**



**Watch Video Solution**

**42. During somatic hybridisation in plants**

- A. Somaclones are produced in large numbers
- B. Apical meristems are cultured to get virus free plants
- C. Cell walls and middle lamella are digested before fusing the cells

D. Crop plants with high level of vitamins, proteins and minerals are hybridised.

**Answer: C**



**Watch Video Solution**

**43.** Prabhani Kranti, a variety of bhindi (lady's finger) is resistant to---

- A. Bacterial blight
- B. Yellow mosaic virus
- C. Black rot
- D. Leaf curl

**Answer: B**



[Watch Video Solution](#)

**44.** To obtain virus - free healthy plants from a diseased one by tissue culture technique, which part/parts of the diseased plant will be taken?

- A. Palisade parenchyma
- B. Both apical and axillary meristems
- C. Epidermis only
- D. Apical meristem only

**Answer: B**



[Watch Video Solution](#)

**45.** Which of the following shows the correct sequence of steps involved in breeding a new genetic variety of a crop

(i) Selection and testing of superior recombinants (ii) Germplasm collection (iii) Cross hybridisation among the selected parents (iv) Evaluation and selection (v) Testing, release and commercialisation of new cultivars

A. ii, iv, iii, i, and v

B. i, ii, iv, iii and v

C. iii, iv, i, ii and iv

D. ii, iii, i, iv and v

**Answer: A**



**Watch Video Solution**

**46.** Artificial hybridisation is the transfer of pollen grains to the stigma from

- A. A flower with desired trait
- B. The same flower
- C. Any flower
- D. None of the above

**Answer: A**



**Watch Video Solution**

**47.** Semidwarf rice variety IR-8 was developed in

- A. Taiwan

B. Philippines

C. India

D. China

**Answer: B**



**Watch Video Solution**

**48.** Pusa Shubra is a variety of

A. Cauliflower

B. Chilli

C. Wheat

D. Cabbage

**Answer: A**



**Watch Video Solution**

**49.** Sonalika and kalyan sona are varieties of

A. Maize

B. Wheat

C. Rice

D. Sugarcane

**Answer: B**



**Watch Video Solution**



50. Which of the following variety is resistant to white rust?

- A. Pusa Sem 2
- B. Pusa Kamal
- C. Pusa sawani
- D. Pusa Swarnim

**Answer: D**



**Watch Video Solution**

51. During hybridization off springs with hybrid vigour superior to both parents are self-pollinated for a few successive generations to

- A. A. Retain their parental characters
- B. B. Remove their parental characters
- C. C. Get homozygosity
- D. D. Segregate characters

**Answer: C**



**Watch Video Solution**

**52. Which one possesses highest protein content**

- A. Spirulina
- B. Glycine max
- C. Arachis hypogea
- D. Pisum sativum

**Answer: A**



**Watch Video Solution**

**53.** Who is known as father of plant tissue culture

A. Haberlandt

B. Steward

C. White

D. Skoog

**Answer: A**



**Watch Video Solution**

**54.** Plants obtained thorough tissue culture are genetically identical and they are obtained by somatic cells. What do you call them

- A. Somaclones
- B. Monaclones
- C. Somatic hybrids
- D. Cross hybrids

**Answer: A**



**Watch Video Solution**

**55.** The correct sequence in the tissue culture technique is

- A. Inoculation explant incubation callus formation organogenesis preparation of medium transferred to field
- B. Preparation of medium inoculation explant incubation callus formation organogenesis transferred to field
- C. Explant incubation preparation of medium inoculation organogenesis callus formation-transferred to field.
- D. Preparation of medium inoculation explant incubation organogenesis callus formation transferred to field.

**Answer: B**



**Watch Video Solution**

**56.** A true breeding plant is

- A. one that is able breed on its own
- B. produced due to cross-pollination among unrelated plants
- C. near homozygous and produces offspring of its own link
- D. always homozygous recessive in its genetic constitution

**Answer: C**



**Watch Video Solution**

**57.** Which one of the following methods is commonly used to maintain the genetic traits of a given plant?

- A. By propagating through seed germination
- B. By propagating through vegetative multiplication
- C. By generating hybrids through inter-generic pollination
- D. By treating the seed with gamma radiations

**Answer: B**



**Watch Video Solution**

**58.** Assertion : Somatic hybridisation is a process where protoplasts of two desired plants can be fused to develop improved plants

Reason : Cross breeding can also induce variability

- A. Both assertion and reason are true but reason is the correct explanation of assertion.
- B. Both assertion and reason are true but reason is not the correct explanation of assertion.
- C. Assertion is true but reason is false.
- D. Both assertion and reason are false.

**Answer: B**



**Watch Video Solution**

**59.** A 'new' variety of rice was patented by a foreign company, though such varieties have been present in India for a long time. This is related to



A. Sharbati Sonora

B. Larma Rojo

C. Co-667

D. Basmati

**Answer: D**



**Watch Video Solution**

**60.** Select the incorrect statement

A. Inbreeding increases homozygosity

B. Inbreeding is essential to evolve purelines in any animals

C. Inbreeding selects harmful recessive genes that reduce fertility and productivity

D. Inbreeding helps in accumulation of superior genes and elimination of undesirable genes.

**Answer: C**



**Watch Video Solution**

## Illustrations

1. Name any five hybrid varieties of crop plants which have been developed in India.



**Watch Video Solution**

2. Briefly describe various steps involved in plant breeding.



[Watch Video Solution](#)

3. Pollen grains of a plant whose  $2n = 8$  are cultured to get callus by tissue culture method. What would be the number of chromosomes in the cells of the callus ?



[Watch Video Solution](#)

4. Discuss the importance of testing of new plant varieties in a geographically vast country like India.



[Watch Video Solution](#)

5. (A) Mutations are beneficial for plant breeding .Taking an example , justify the statement .

(b) Discuss briefly the technology that made us self - sufficient in food production .



**Watch Video Solution**

6. (A) Mutations are beneficial for plant breeding .Taking an example , justify the statement .

(b) Discuss briefly the technology that made us self - sufficient in food production .



**Watch Video Solution**

7. Which part of the plant is best suited for making virus-free plants and why?



**Watch Video Solution**

8. What is the major advantage of producing plants by micropropagation?



**Watch Video Solution**

9. Find out what the various components of the medium used for propagation of explants in vitro are?



**Watch Video Solution**

**10.** Why are plants obtained by protoplast culture are called somatic hybrids ?



**Watch Video Solution**

**11.** The culture medium nutrient medium can be referred to as a highly enriched laboratory solid. Justify the statement



**Watch Video Solution**

## Solved Examples

**1.** Plants can be made disease-resistant by

A. Breeding with their wild relatives

B. Colchicine treatment

C. Hormone treatment

D. Heat treatment

**Answer: A**



**Watch Video Solution**

2. The offspring from a cross between two individuals differing in at least one set of characters is called

A. Polyploid

B. Hybrid

C. Mutant

D. Variant

**Answer: B**



**Watch Video Solution**

**3. Dwarf wheat was developed by**

A. Vavilov

B. Borlaug

C. Swaminathan

D. None of these

**Answer: B**



**Watch Video Solution**



4. Majority of the high yielding varieties of 'Indian rice' have been developed by cross between

A. *O. sativa* japonica  $\times$  *O. sativa* indica

B. *O. sativa* indica  $\times$  *O. nivara*

C. *O. nivara*  $\times$  *O. sativa* indica

D. *O. nivara*  $\times$  *O. rufipogon*

**Answer: B**



**Watch Video Solution**

5. The process of malting of individuals , which are more closely related than the average of the population to which they belong , is called

Or

Which of the following is not used for crop improvement

- A. Inbreeding
- B. Introduction
- C. Hybridization
- D. Mutations

**Answer: C**



**Watch Video Solution**

6. A man made allopolyploid cereal crop is

- A. *Hordeum vulgare*
- B. *Raphano brassica*

C. Triticale

D. Zea mays

**Answer: C**



**Watch Video Solution**

7. Crosses between, the plants of the same variety are called

A. Interspecific

B. Intervarietal

C. Intravarietal

D. Intergeneric

**Answer: B**



**Watch Video Solution**

8. Which of the following effect is produced by colchicine

- A. Duplication of DNA
- B. Duplication of chromosomes
- C. Formation of spindle fibres
- D. Hinderance in the formation of middle wall

**Answer: B**



Watch Video Solution

9. A change in the chromosome number is called

- A. Chromosomal aberration

B. Gene mutation

C. Somatic mutation

D. Polyploidy

**Answer: A**



**Watch Video Solution**

**10. Who coined the term 'heterosis'**

A. Shull

B. Huxley

C. Robard

D. Tansley

**Answer: B**



**Watch Video Solution**

### Practice Exercise 1

1. \_\_\_\_\_ is the root of any plant breeding programme.

A. Hybridisation

B. Selection

C. Mutation

D. Genetic variability

**Answer: D**



**Watch Video Solution**

2. The entire collection of plants or seeds having all the diverse alleles for all genes in a given crop is called

- A. genetic erosion
- B. Gene pool
- C. Germplasm collection
- D. Genetic drift

**Answer: C**



**Watch Video Solution**

3. What are the main objectives of plant breeding?

- A. More yield

- B. Better quality
- C. Stress resistance
- D. All of the above

**Answer: D**



**Watch Video Solution**

4. A crop must be tested for at least growing season(s) before releasing for commercialization.

- A. 3
- B. 2
- C. 1
- D. 4



**Answer: A**



**Watch Video Solution**

5. India is mainly an agriculture country. Agriculture accounts for approximately \_\_\_\_\_per cent of India's GDP and employs nearly \_\_\_\_\_per cent of the population.

A. 0.33

B. 0.9

C. 0.62

D. 0.05

**Answer: A**



**Watch Video Solution**

## Practice Exercise 2

1. Variation appearing in tissue culture are :

- A. Somaclonal variations
- B. Clone variations
- C. Somatic variations
- D. Tissue culture variation

**Answer: A**



**Watch Video Solution**

2. Virus free plants from a virus infected plant can be obtained through:

- A. Root tip culture
- B. Shoot tip culture
- C. Callus culture
- D. Suspension culture

**Answer: B**



**Watch Video Solution**

3. For producing protoplasts from plant cells which of the following are required ?

- A. Amylas and pectinase
- B. Cellulase and Proteinase
- C. Cellulase and pectinase
- D. Cellulase and amylase

**Answer: C**



**Watch Video Solution**

**4. Protoplast fusion causes :-**

- A. Rapid growth of off spring
- B. Somatic hybridization
- C. Production of useful allopolyploid
- D. Both (2) and (3)

**Answer: D**



**Watch Video Solution**

5. Which one of the following is an example of somatic hybridisation

- A. Bt cotton
- B. Pomato
- C. Golden rice
- D. All of these

**Answer: B**



**Watch Video Solution**

1. How many percent of the population of India get employes by agriculture

A. 82

B. 62

C. 17

D. 92

**Answer: A**



**Watch Video Solution**

2. The Nobel Laureate, who developed semi-dwarf wheat varieties in Mexico was

A. Normal E. Borlaug

B. Herbert Boyer

C. William Harvey

D. Tyhoid Mary

**Answer: A**



**Watch Video Solution**

3. Internatinal rice research institue (IRRI) is located in

A. Hyderbad (India)

B. Manial (Philippines)

C. New York (U.S.A)

D. Tokyo (Japan)

**Answer: B**



**Watch Video Solution**

**4. Sonalika and kalyan sona are varieties of**

A. Sugar cane

B. Millets

C. Wheat

D. Rice



**Answer: C**



**Watch Video Solution**

**5. Jaya and Ratna are the semi-dwarf varieties of**

A. Wheat

B. Rice

C. Cowpea

D. Mustard

**Answer: B**



**Watch Video Solution**

6. Improve rice variety IR-8 has been introduced in India from

- A. Taiwan
- B. Japan
- C. Philippines
- D. Bangladesh

**Answer: C**



**Watch Video Solution**

7. Inbreeding increases \_\_\_\_\_

- A. Heterozygosity
- B. Homozygosity

C. Heterophilly

D. None

**Answer: B**



**Watch Video Solution**

**8. Scented basmati rice is the contribution of :**

A. Dr. Borlaug

B. Dr. B.P. Paul

C. Dr. M.S. Swaminathan

D. Dr. A.K. Singh

**Answer: C**



**Watch Video Solution**

9. Pusa Komal variety of Cow pea is resistant to disease

- A. hill bunt
- B. white rust
- C. leaf curl
- D. bacterial blight

**Answer: D**



Watch Video Solution

10. Triticale is developed through intergeneric hybridisation of:

- A. wheat and rye
- B. maize and rice
- C. wheat and rice
- D. wheat and barley

**Answer: A**



**Watch Video Solution**

## **In Chapter Exercise B**

**1. Tissue culture is beneficial for :**

- A. Micropropagation
- B. Production of disease free plants

C. Androgenic haploid

D. All the above

**Answer: D**



**Watch Video Solution**

2. Now a days plants grown by tissue culture called \_\_\_\_\_.

A. Explant

B. Somaclones

C. Micropropagation

D. Androgenic haploids

**Answer: B**



**Watch Video Solution**

3. Virus free plant can be obtained through :-

- A. Grafting
- B. Callus culture
- C. Shoot tip culture
- D. Suspension culture

**Answer: C**



Watch Video Solution

4. The technique of obtaining large number plantlets by tissue culture methods is called

- A. Plantlet culture
- B. Micropropagation
- C. Macropropagation
- D. Organ culture

**Answer: B**



**Watch Video Solution**

**5. A plant cell without cell wall is called**

- A. Proplast
- B. Protoplast
- C. Bucleoplasm
- D. Explant



**Answer: B**



**Watch Video Solution**

**6.** A somatic hybride between potato and tomato is named as

A. Bomato

B. Mopato

C. Pomato

D. Topamo

**Answer: C**



**Watch Video Solution**

7. The enzymes required to obtain protoplast from a plant cell are

- A. Cellulase
- B. Chitinase
- C. Pectiases
- D. Both (1) and (3)

**Answer: D**



**Watch Video Solution**

8. Plant part, used for culture is called

- A. Scion

B. Stock

C. Explant

D. Callus

**Answer: C**



**Watch Video Solution**

**9.** The pH of nutrient medium in plant tissue culture is adjusted between \_\_\_\_\_.

A. 3 – 4

B. 4.1 – 4.8

C. 5 – 5.8

D. 6 – 7

**Answer: C**



**Watch Video Solution**

**10.** During somatic hybridisation in plants:

- A. the cell wall and the middle lamella are digested before fusing the cells
- B. somaclones are produced in large numbers
- C. crop plants with higher levels of vitamins, protein and minerals are hybridised
- D. the apical meristems are cultured to get virus-free plants

**Answer: A**



[Watch Video Solution](#)

## Illustration

1. Explain in brief the role of animal husbandry in human welfare.



[Watch Video Solution](#)

2. If your family owned a dairy farm, what measures would you undertake to improve the quality and quantity of milk production?



[Watch Video Solution](#)

3. What is meant by the term 'breed'? What are the objectives of animal breeding?



Watch Video Solution

4. Millions of chickens were killed in West Bengal, Assam, Odisha and Maharashtra recently. What was the reason?



Watch Video Solution

5. In animal husbandry if two closely related animals are mated for a few generations, it results in loss of fertility and vigour why is this so?



Watch Video Solution

6. A few statements are given below followed by set of terms in a box , pick the correct term and write it against the appropriate statement

(a) Mating of closely related individuals within the same breed.	(i) Cross breeding
(b) Mating of animals of same breed but having no common ancestors on either side for 4-6 generations.	(ii) Inter-specific hybridisation
(c) Mating of animals of two different species.	(iii) Outbreeding
(d) Breeding of animals belonging to different breeds.	(iv) Outcrossing
	(v) Inbreeding



**Watch Video Solution**

7. what is aquaculture ? Give example of an animal that can be multiplied by aquaculture .



**Watch Video Solution**

8. what are the duties of a veterinary doctor in management of a poultry farm ?



**Watch Video Solution**

9. Inter-specific crosses are rare in nature and inter-generic crosses almost unknown .why?



**Watch Video Solution**

10. Differentiate between pisciculture and aquaculture .



**Watch Video Solution**



1. Animal husbandry deals with

- A. Only caring of livestock
- B. Only breeding of livestock
- C. Both caring and breeding of livestock
- D. Slaughtering of livestock

**Answer: C**



**Watch Video Solution**

2. Which of the following animal is not included in livestock?

- A. Pig
- B. Buffalo

C. Goat

D. Rhinoceros

**Answer: D**



**Watch Video Solution**

**3.** It is estimated that more than of the world livestock population in India and China.

A. 0.25

B. 0.7

C. 0.4

D. 0.5

**Answer: B**



[Watch Video Solution](#)

4. Contribution to the world farm produce by india and china is

A. 0.05

B. 0.1

C. 0.15

D. 0.25

**Answer: D**



[Watch Video Solution](#)

5. All the following are objectives of dairy farm management, except

- A. Improvement in quality of milk
- B. selection of good breeds having high yielding potential
- C. Selection of breeds which are vulnerable to diseases
- D. Maintenance of quality and quantity of fodder

**Answer: C**



**Watch Video Solution**

6. 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
- D. Both (1) & (2)

**Answer: D**



**Watch Video Solution**

7. \_\_\_\_\_ is the management of animals for milk and its products for human consumption.

- A. Poultry
- B. Dairying
- C. Apiculture
- D. Fisheries

**Answer: B**



**Watch Video Solution**

**8.** Which of the following measure is taken to realise the yield potential of cattle?

- A. Proper housing
- B. Adequate supply of water and fodder
- C. Stringent cleanliness and hygiene
- D. All of these

**Answer: D**



**Watch Video Solution**

9. Which of the following birds are included in poultry?

- A. Chicken and ducks only
- B. Chincken, ducks, turkey
- C. Chicken only
- D. Chicken, ducks, turkey, geese

**Answer: D**



**Watch Video Solution**

10. The chances of contracting bird flu from a properly cooked (above  $100^{\circ}C$ ) chicken and egg are

- A. Very high
- B. High

C. Moderate

D. None of these

**Answer: D**



**Watch Video Solution**

**11.** Which of the following can drastically affect the egg and chicken consumption in a country?

A. Bird flu

B. Inbreeding

C. Out-crossing

D. Cross-breeding

**Answer: A**





[Watch Video Solution](#)

**12.** Controlled mating followed by selection in order to obtain superior genotypes of domesticated animals is known as

- A. Animal Breeding
- B. Weeding
- C. Feeding
- D. Heeding

**Answer: A**



[Watch Video Solution](#)

**13.** A group of animals which are related by descent and share many similarities are referred to as

- A. Breed
- B. Variety
- C. Race
- D. Species

**Answer: A**



**Watch Video Solution**

**14.** Inbreeding is carried out in animals husbandry because it

- A. Increases vigour I

- B. Improbes the breed
- C. Increases heterozygosity I
- D. Increases homozygosity

**Answer: D**



**Watch Video Solution**

**15.** Which of the following is necessary to evolve a pureline in any animal?

- A. Cross breeding
- B. Interspecific hybridization
- C. Out-crossing
- D. Inbreeding

**Answer: D**



**Watch Video Solution**

**16.** Mule is an example of

- A. Interspecific hybridization, obtained by crossing male donkey and female horse
- B. Interspecific hybridization, obtained by crossing female donkey and male horse
- C. Out-crossing, obtained by crossing male donkey and female horse
- D. Cross breeding, obtained by crossing female donkey and male horse

**Answer: A**



**Watch Video Solution**

**17. Artificial insemination is advantageous because**

- A. It is economical and success rate of fertilization is high
- B. Several cows can be fertilized by the semen collected from one bull
- C. The semen can be stored frozen for a long period and can be easily transported to remote parts of the country
- D. All of these

**Answer: D**



[Watch Video Solution](#)

**18.** The process in which semen is collected from the male that is

chosen as a parent and injected into the reproductive tract of the selected female by the breeder is known as

- A. Animal breeding
- B. Artificial insemination
- C. MOET
- D. Artificial spermatogenesis

**Answer: B**



[Watch Video Solution](#)

**19.** Which one of the following products of apiculture is used in cosmetics and polishes?

- A. Honey
- B. Oil
- C. Royal jelly
- D. Beeswax

**Answer: D**



**Watch Video Solution**

**20.** The term pisciculture means

- A. Inland fisheries

B. Aquatic plants

C. Marine fisheries

D. Both (1) & (2)

**Answer: D**



**Watch Video Solution**

## Practice Exercise 1

1. What includes poultry birds?



**Watch Video Solution**

2. Define breed.





[Watch Video Solution](#)

3. What includes fisheries?



[Watch Video Solution](#)

## Practice Exercise 2

1. Give examples of Freshwater fishes.



[Watch Video Solution](#)

2. Give examples of marine fishes.



[Watch Video Solution](#)

3. Differentiate between pisciculture and aquaculture .



Watch Video Solution

### In Chapter Exercise A

1. Proper utilization of economically important animals is called

- A. livestock
- B. livestock management
- C. poultry
- D. agronomy

**Answer: B**



**Watch Video Solution**

**2. Shell fish does not include**

A. prawn

B. crab

C. oysters

D. fishes

**Answer: C**



**Watch Video Solution**

3. The livestock production in India and china is .....

A. 20

B. 40

C. 50

D. 25

**Answer: D**



**Watch Video Solution**

4. The agricultural practice of breeding and raising of livestock is called

A. veterinary science

B. nutritive science

C. animal husbandry

D. agronomy

**Answer: C**



**Watch Video Solution**

**5. The buffaloes are better than cows , because they**

A. live longer

B. give more milk

C. are disease resistant

D. all of the above

**Answer: D**



**Watch Video Solution**

**6. Father of white revolution in India\_\_\_\_\_**

- A. Dr. Swaminathan
- B. Dr. Norman Borlaug
- C. Varghese Kurein
- D. Dr.B.V.Rao

**Answer: C**



**Watch Video Solution**

7. Bird flu is caused by

A. protozoan

B. bacteria

C. virus

D. helminth

**Answer: C**



**Watch Video Solution**

8. Rearing of these birds is called poultry

A. chickens

B. ducks

C. turkeys and geese

D. all the above

**Answer: D**



**Watch Video Solution**

**9. The young chicken raised specifically for meat are called**

A. layers

B. pullets

C. ducklings

D. broilers

**Answer: D**



**Watch Video Solution**



10. Which of the following is the "bird flu virus" ?

A.  $H_5N_1$

B. Haemophilys influenzae

C. HIV

D. Rhino virus

**Answer: A**



Watch Video Solution

In Chapter Exercise B

1. Practice of mating of animals within the same breed, but having no common ancestors on either side of their pedigree upto 4-6 generation is

- A. inbreeding
- B. out crossing
- C. cross breeding
- D. line breeding

**Answer: B**



**Watch Video Solution**

2. One of the following is an exotic breed of cattle

- A. used for cross breeding
- B. allowed to multiply and replace local breeds
- C. cheaper
- D. resistant to local pests and pathogens

**Answer: A**



**Watch Video Solution**

**3. Hinny is a hybrid of male**

- A. horse and female donkey
- B. donkey and female horse
- C. goat and female lam
- D. sheep and female goat

**Answer: A**



**Watch Video Solution**

**4. Surrogate mother is**

- A. mother without lactation
- B. future mother with embryo implanted from another
- C. carrying several embryos
- D. artificially inseminated female

**Answer: B**



**Watch Video Solution**

5. Inbreeding depression refers to

- A. increased fertility and productivity
- B. reduced fertility and productivity
- C. enhanced fecundity and prodigality
- D. enhanced life span and fertility

**Answer: B**



**Watch Video Solution**

6. A group of animals which are related by descent and share many similarities are referred to as

- A. class

B. breed

C. category

D. Species

**Answer: B**



**Watch Video Solution**

**7. Homozygosity can be developed by**

A. inbreeding

B. out breeding

C. cross breeding

D. MOET

**Answer: A**



**Watch Video Solution**

**8.** In animal pure lines can be evolved by practicing

- A. inbreeding
- B. cross breeding
- C. out breeding
- D. All

**Answer: A**



**Watch Video Solution**

9. The hormone used in super ovulation in cattles is

A. FSH

B. LH

C. STH

D. LTH

**Answer: A**



**Watch Video Solution**

10. The new breed of sheep developed in Punjab by crossing Bikaneri Ewes and Marino Rams is

A. dorset



B. scottish black face

C. hisardale

D. murrah

**Answer: C**



**Watch Video Solution**