BIOLOGY

BOOKS - A2Z BIOLOGY (HINGLISH)

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

Section A Topicwise Questions Topic 1 Animal Husbandry Management Of Farms And Farm Animals D

1. Animal husbandry deals with

A. The care and breeding of livestock like cows, buffaloes, pigs, horses, cattle , sheep, camels goats, etc.

B. poultry farming

C. fisheries

D. All of the above

Answer: D

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2. Fisheries include rearing, catching and selling of

A. Fish

B. Shell-fish

C. Crustaceans (prawns, crabs)

D. All of the above

Answer: D

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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

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4. Bee-keeping is called

A. Apiculture

B. Sericulture

C. Silviculture

D. Pisciculture

Answer: A

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5. Most widly reared Honey Bee species of India is

A. Apis indica

B. Apis dorsata

C. Apis mellifera

D. Apis florae

Answer: A

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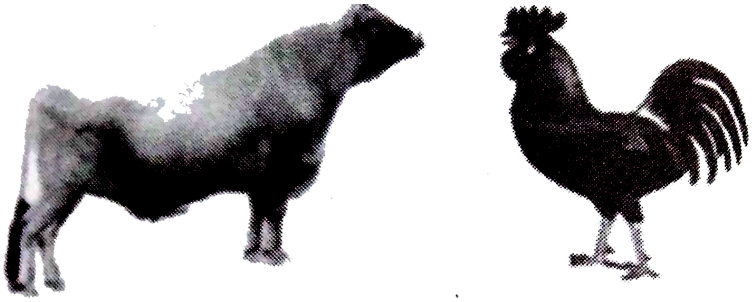
6. The following figure shows the improved breed of cattle and chickens where



(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

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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 A and B

D. None of the above

Answer: C

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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

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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 and iv are incorrect

C. I and iii are correct

D. All are correct

Answer: D

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10. Halikar, a draught breed of cattle occurs in

A. A.P

B. M.P

C. Karnataka

D. Gujrat.

Answer: C

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

A. Steward

B. Panchanan maheshawari

C. M.S. swaminathan

D. Ram Deo misra

Answer: C

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12. Norman borlaug is associated with

A. White revolution

B. Green revolution

C. Blue revolution

D. Yellow revolution

Answer: B

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13. Super-ovulation and embryo trasplantation are meant for improving :

A. Human race

B. Livestock

C. Poultry

D. Plants

Answer: B

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14. Ranikhet disease is associated with :

A. Honey bees

B. Hens

C. Fishes

D. Pigs

Answer: B

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

A. Broilers

B. Cockerels

C. pullets

D. hens

Answer: A

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Section A Topicwise Questions Topic 2 Animal Breeding Bee Keeping And Fisheries

1. What approaches have to be applied to achieve improvement in quality and prdouctivity of animals ?

A. conventional practices

B. Artificial insemination

C. MOET

D. all of the above

Answer: D

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2. 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

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3. 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

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4. 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

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5. In which method of animal breeding two different species of male and female animals are mated ?

A. Cross breeding

B. outbreeding

C. out crossing

D. interspecific hybridisation

Answer: D

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6. 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. cross breeding

C. out crossing

D. interspecific hybridisation

Answer: C

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7. MOET is a progreamme that is used to increase:

A. Biomass

B. herd size

C. Yield

D. Disease resistance

Answer: B

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8. Hisardale has been developed by

A. out-crossing

B. interspecific hybridisation

C. cross breeding

D. intraspecific hybridisation

Answer: C

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9. Fill in the blank

1. Multiple ovulation embryo transfer technology is for___a_____improvement

2. In MOET, cow is administered hormone with _____b___like activity to induce follicular maturation and super ovulation.

(3). Instead of one egg per cycle __c_____eggs are produced through it.

(4). The fertilized eggs at _____d_____cell stages are revovered non -surgically and transfered to surrogate mother

A. a-breed, b-LH, c-6 to 8 , d-8 to 16

B. a-hed, b-FSH,c-8 to 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

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10. Which one of the following products of apiculture is used is cosmetics and polishes?

A. royal jelly

B. wax

C. honey

D. Both A and B

Answer: B

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11. Inbreeding depression is overcome by employing

A. out-crossing

B. cross-breeding

C. interspecific hybridisation

D. infraspecific hybridisation

Answer: A

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

A. MOET

B. Artificial insemination

C. interspecific hybridisation

D. Cross-breeding

Answer: B

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13. 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. ii,iii,iv,vi and vii

D. i,iv,v and vi

Answer: D

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14. Shell-fish is the member of which taxon ?

A. Mollusca

B. Crustacea

C. Fishes

D. Insecta

Answer: A

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

A. 0.25

B. 0.7

C. 0.5

D. 0.75

Answer: B

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16. Artificial insemination means

A. introduction of sperms of a healthy donor directly into ovary

B. Transfer of sperm of healthy donor to a test tube contaiming 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

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17. 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

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18. 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 diseases free condition

D. both A and B

Answer: D

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19. 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

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20. Which technique is used for the herd improvement ?

A. MOET

B. Artificial insemination

C. interspecific hybridisation

D. Controlled breeding experiments

Answer: A

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21. In which , male and female animals of two different related species are mated ?

A. inbreeding

B. Out-crossing

C. Cross-breeding

D. interspecific hybridisation

Answer: D

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22. 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 and iv are true

B. iii,iv and v are false

C. I,ii and iv are true

D. I,ii,iii and v are true

Answer: C

23. Multiple Ovulation and Embryo Transfer (MOET) is a method of :

A. fish cultivation

B. hybridisation of cattle

C. Birth control

D. Cloning of sheep

Answer: B

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

A. Artificial insemination with pedigree bull

B. Embryo transplantation

C. Super-ovulation of high yielding cow

D. All of the above

Answer: D

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25. Fish introduced in India by foreigners is

A. Labeo rohita

B. Mystus singhala

C. Pomfret

D. Clarius batrachus

Answer: C

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26. Pisciculture is rearing and production of :

A. Fishes

B. Birds

C. Reptiles

D. Wool yielding animals

Answer: A

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27. An edible fresh water teleost is

A. Catla catla

B. Hilsa hilsa

C. Rays and skates

D. sharkes

Answer: A

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28. Bull semen is sotred for artificial insemination in

A. Ice

B. Liquid carbon dioxide

C. Liquid oxygen

D. Liquid nitrogen

Answer: D

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29. Which one is not a marine fish ?

A. Pomfret

B. Sardine

C. Rohu

D. Mackerel

Answer: C

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

A. Interspecific hybridization

B. cross breeding

C. out breeding

D. out crossing

Answer: D

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31. Which of the 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 express harmful recessive genes that are eliminated by selection .

Answer: B

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32. In plant breeding programme, the entire collection (of plants/seed) having all the diverse alleles for all genes in a given crop is called

A. Germplasm collection

B. Selection of superior recombinants

C. Cross hybridisation among the selected parents

D. Evalution and selection of parents

Answer: A

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Section A Topicwise Questions Topic 4 Single Cell Protein Scp

1. Which of the following can be used for cultivation of SCP (like spirulina) ?

A. Straw

B. Sewage

C. Waste water from potato processing plants

D. All of the above

Answer: D

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2. Find out the incorrect statement.

A. 250 g of methylophilus methylotrophus produce $25 \times 10^3 kg$ of protein in a day.

B. The shift from meat to grain diets creats more demand for cereals.

C. 250 kg cow produce 200 g of protein per day.

D. Spirulina when growing on sewage also reduces environmental pollution besides

producing large quantities of protein

Answer: B

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3. One of the alternate sources of protein for animals and human nutrition is

A. Single cell protein

B. Non-vegetarian meal

C. Mushrooms

D. Pulses

Answer: A

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4. Which of the following is source of single cell protein

A. Bacillus thuringiensis

B. Azospirillum

C. Saccharomyces cerevisiae

D. Methylophilus methylotrophus

Answer: D

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Section A Topicwise Questions Topic 5 Tissue Culture

1. During somatic hybridisation in plants

A. Someaclones are produced in large members

B. Apical meristems are cultured to get virus -free plants

C. Cells walls and middle lamella are digested before fusing the cells

D. Crop plants with higher levels of vitamins, proteins and minearls are hybridised.

Answer: C

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2. In tissue culture technique the source of carbon is

A. Glucose

B. CO_2

C. Maltose

D. Sucrose

Answer: D

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3. Micropropagation technique is used for the commercial scale production of

A. Banana

B. Sugarcane

C. Potato

D. All of the above

Answer: A

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4. Inherent capacity of a cell to regenerate the whole organism is called

A. Totipotency

B. Ontogeny

C. Phylogeney

D. Proliferation

Answer: A

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5. In tissue culture medium, the soruce of phtohormones is

A. Agar agar

B. Micronutrients

C. Glucose

D. Coconut

Answer: D

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6. Match the columns and choose the correct option

1.	Totipotency	(a)	Breeding crops with higher levels of nutrients
2.	Micropropagation	(b)	Plant grown from hybrid protoplast
3	Somaclone	(c)	Producing large number of plants through tissue culture
4.	Somatic hybrid	(d)	Capacity to generate a whole plant from an explant
5.	Biofortification	(e)	Plants genetically identical to original plant

A. 1-d,2-c,3-e,4-b,5-a

B. 1-a,2-e,3-b,4-d,5-c

C. 1-c,2-b,3-e,4-d,5-c

D. 1-d,2-e,3-a,4-d,5-c

Answer: A

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7. Meristem culture is practised in horticulture to get

A. somaclonal variations

B. Haploid plants

C. Virus free plants

D. Slow growing cultures

Answer: C

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8. Plant piece used in tissue culture is called

A. Explant

B. Somaclone

C. Inoculant

D. Clone

Answer: A

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9. Androgenic haploidy makes use of cells

A. Anther cells

B. Callus cells

C. Megaspore cells

D. Microspore cells

Answer: A

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10. 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 ?

A. 56

B. 28

C. 21

D. 14

Answer: D

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11. Cellular totipotency is demonstrated by

A. Gymnosperm

B. All plant cells

C. Only bacterial cells

D. All eukaryotic cell

Answer: B

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12. The technique of obtaining large number of plantets through tissue culture is

A. Micropropagation

B. Macropropagation

C. Organ culture

D. Plantlet culture.

Answer: A

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13. Somatic hybridisation is carried out by

A. pollen culture

B. cell culture

C. protoplast fusion

D. halpoid culture

Answer: C

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14. Callus is

A. Plant hormone

B. Root formation in culture media

C. plant by product

D. Undifferentiated mass of cells

Answer: D

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15. Alongwith auxin, another hormone is used in culture technique. It is

A. Gibberellin

B. Cytokinin

C. Ethylene

D. ABA

Answer: B

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16. In tissue culture, callus can be induced to form shoot or root bt altering the ratio of

A. Auxin to cytokinin

B. Cytokinin to ethylene

C. Auxin to gibberellin

D. Gibberellin to cytokinin

Answer: A

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17. Androgenic haploids were produced from anther culture for the first time by

A. Bateson

B. Steward

C. Auerbach and stadler

D. Guha and maheshwari

Answer: D

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18. Plant medium used widely in preparation of culture medium is got from

A. Cycas revoluta

B. Cocos nucifera

C. Pinus roxburghii

D. Borassus flabellifer

Answer: B

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19. Who could grow tomato roots successfully and develop the technique of tissue culture of rthe first time ?

A. Haberlandt

B. P.R. white

C. W.H. muir

D. F.C. Steward

Answer: B

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20. In Tobacco callus, which one shall induced shoot differentiation combination of auxin and cytokinin ?

A. Higher concentration of cytokinin and lower concentration of auxin

B. Lower concentration of cytokinin and higher concentration of auxin

C. Only cytokinin and no auxin

D. Only auxin and no cytokinin

Answer: A

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21. Crosses involving plants of the same varieities are

A. intraverietal

B. interspecific

C. intervarietal

D. intra-generic

Answer: A

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22. Hybrid of potato and tomato is

A. Tomapo

B. Pomato

C. Potamato

D. none of the above

Answer: B

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23. The enzymes required to obtain wall-free or naked protoplasts are

A. Cellulase and proteinase

B. Cellulase and pectinase

C. cellulase and amylase

D. amylase and pectinase

Answer: B

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Section B Assertion And Reason Questions

1. Assertion : Milk yield in primarily dependent on the quality of breeds in the farm .

Reason : Selection of good breeds having high yielding potential combined with resistance to disease is very important.

A. If both assertion and reason are true and the reason is the correct

explanation of the assertion

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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2. Assertion : Poultry is the class of domesticated fowl (birds) used for food or for their eggs.

Reason : Poultry typically include chicken and ducks, and sometime turkey and geese.

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

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

the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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3. Assertion : Mating of more closely related individuals within the same breed for 4-6 generation is called in breeding.

Reason : When inbreeding depression

becomes a problem, selected animals of the breeding population should be mated with unrelated superior animals of the another breed.

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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4. Assertion : in out crossing, superior males of one breed are mated with superior females of another breed.

Reason : Mating between males and females of different breeds is called interspecific hybridisation.

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: D

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5. Assertion : cross-breeding allows the desirable qualities of two different breeds.

Reason Controlled breeding experiments are carried out using artificial insemination.

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

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

the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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6. Assertion : MOET technique has been used for cattle, sheep, rabbits , buffaloes, mares ect. Reason : High milk yielding breeds of females and high quality (lean meat with more lipid)

meat-yielding bulls have been bred successfully to increase herd size in a short time by MOET

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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7. Assertion : Bees are the pollinators of sunflowers, brassica, apple and pear.

Reason : Bee-keeping is not labour intesive

A. If both assertion and reason are true and the reason is the correct

explanation of the assertion

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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8. Assertion : All our major food crops are derived from domesticated varieties.

Reason : Better management practices and increases in acreage can increases yield, but only to a limited extent.

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

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

the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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10. Assertion : P-1542 is an indian hybrid crop of pea.

Reason : Saccharum barberi is also called tropical cane.

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

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

the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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11. Assertion : During the period 1960 to 2000, rice production increased form 11 million tonnes to 75 million tonnes while wheat production went up from 35 million toones to

89.5 million tonnes.

Reason : Norman E. borlaug, at IRRI developed semidwarf wheat and rice.

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: D

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12. Assertion : Before breeding is undertaken, it is important to know about the causative organism and the mode of transmission .

Reason : Black rot of crucifers is caused by fungi.

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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13. Assertion : high aspartic acid, high nitrogen and low sugar content in maize leads to resistance to maize stem borers.

Reason : Smooth leaved and nectarless cotton varieties provide resistance from jassids.

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: D

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14. Assertion : More than 25 per cent of human population is suffering from hunger and malnutrition.

Reason : It was learnt by scientists, during 1960 , that whole plants could be regenerated form explants.

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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15. Assertion : Plants produced by micropropagation will be genetically identical to original plants from which they were grown.
Reason : Plants produced by micropropagation are called somaclones.

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

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

the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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16. Assertion : In breeding increases homozygosity exposing harmful recessive genes, some of which are eliminated by selection.

Reason : Continued inbreeding reduces fertility and productivity.

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

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

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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Section D Chapter End Test

1. Pebrine disease in silkworm is caused by

A. Leishmania

B. Nosema

C. Trypanosoma

D. Vorticella

Answer: B

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2. Black rot of crucifer is caused by

A. Bacteria

B. Fungi

C. Virus

D. Protozoa

Answer: A

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

A. Variants through picking up somaclonal variations

B. Genetically uniform population of an elite species

C. Homozygous diploid plants

D. Development of new species

Answer: B

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4. On culturing the young anther of a plant a botanist gog a few diploid plants along with

haploid plants. Which of the following might have given the diploid plants.

A. Exine of pollen grain

B. Vegetative cell of pollen

C. Cells of anther wall

D. Generative cell of pollen

Answer: C

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5. Hen's eggs contain two types of yolk. They are

A. Yellow and red

B. Yellow and brown

C. Yellow and white

D. Red and white

Answer: C

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6. In crop improvement programme, haploids are important because they

A. Require one half of nutrients

B. Are helpful in study of meiosis

C. Grow better under adverse conditions

D. From perfect homozygous individuals diploidisation

Answer: C

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7. Best aquarium is located at

A. New Delhi

B. Lucknow

C. Trarapur,mumbai

D. Kolkata

Answer: C

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8. In tissue/ bacterial culture glassware and nutrients are sterilized through

A. water bath at $200^{\circ} C$

B. Dry air oven at $200^{\circ} C$

C. Dehumidifier

D. Autoclave

Answer: D

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9. An old breeding technique is

A. Introduction

B. Selection

C. Mutation breeding

D. hybridisation

Answer: D

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10. Hybrid vigour is best maintained in vegetatively reproducing plants because they are

A. Resistance to diseases

B. Easily propagated

C. With long life span

D. Little liable to lose vigour due to absence of sexual reproduction

Answer: D

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11. Desired improved varieties of economically useful crops are raised by

A. vernalisation

B. Mutation

C. natural selection

D. hybridisation

Answer: D

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12. The new varieties of plants are produced by

A. selection and hybridisation

B. mutation and selection

C. introduction and mutation

D. selection and introduction

Answer: A

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13. Jaffarbadi, Murrah and Meshasna are breeds of

A. Cow

B. Buffalo

C. Goat

D. Sheep

Answer: B

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14. Wild varieties of plants must be conserved to

A. Maintain ecosystem

B. feeding wild animals

C. future evolution

D. Incorporate useful traits in future crop varieties

Answer: D

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15. Plant breeder who developed the first hybrid was

A. Fairchild

B. Mendel

C. Swaminathan

D. Protozoan

Answer: A

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16. Coccidiosis in poultry is caused by:

A. Virus

B. Fungus

C. Helminth parasite

D. Protozoan

Answer: D

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17. IPGRI is

A. Indian plant genetic resource institute

B. Internationl plant genetic resource institute

C. International pine genetic resource institute

D. International potato genetic resource institute

Answer: B

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18. Pure line breed refers to

A. Homozygosity and independent assortment

B. Homozygosity only

C. heterozygosity

D. heterozygosity and linkage

Answer: B

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19. Exotic breed of cattle is

A. Brown swiss

B. Holstein

C. Jersey

D. All of the above

Answer: D

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20. If more then single species of fish is cultured at a time, then it is called

A. Monoculture

B. Aquaculture

C. Polyculture

D. Mori culture

Answer: C

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21. Which is a fungal disease of poultry?

A. Anthrax

B. Ranikhet

C. Foot and mouth

D. Pebrin

Answer: B

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22. Axenic culture is

A. Pure culture without any contamination

B. Pure culture without any nutrient

C. Culture of a tissue

D. Culture of gene

Answer: A

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23. Cross between two species of the same genus is

A. Intraspecific hybridisation

B. Intervarietal hybridisation

C. Interspecific hybridisation

D. Intergeneric hybridisation

Answer: C

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24. Haploids from anther were first obtained from

A. Brassica

B. Datura

C. Nicotiana

D. Grssypium

Answer: B

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25. Higher milk yielding best breed of milch cattle in the world is

A. brown jersey

B. ongole

C. holstein-friesian

D. hallikar

Answer: C

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26. Technique that was employed to produce haploids of Datura was

A. Meristem culture

B. Anther culture

C. Embryo culture

D. Protoplast culture

Answer: B

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27. Protoplast isolation was first carried out by

A. mendel

B. cocking

C. bateson

D. skoog

Answer: B

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28. First man-made cereal Triticale is

A. Diploid

B. Hexaploid

C. Octaploid

D. B and C

Answer: B

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29. Single cell proteins are

A. Microorganisms

B. Enzymes

C. Antibiotics

D. Toxins

Answer: A

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30. "Gill rot" deases of fish is due to

A. Aeromonas species

B. Branchiomyces sanguinis

C. Bacillus polymyxa

D. Bacillus subtilis

Answer: B

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31. A man - made genus produced by a cross between cabbage and Radish is

A. Bursa pastoris

B. Lysogenicophyll

C. Raphanobrassica

D. Secale

Answer: C

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32. Which is man-made ?

A. Triticum

B. Cicer arietimum

C. Triticale

D. Secale

Answer: C

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33. In protoplast fusion, the enzymes required are

A. cellulase, hemicellulase, pectinase

B. Pectinase

C. Ligase, hemicellulase

D. Hemicellulase

Answer: A

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34. Pick up the wrong statement.

A. Pectinase and cellulase dissolve cell wall

B. Some cyanobacteria form symbiotic association with fern Azolla

C. Regeneration of cell wall in somatic hybridization is induced by PEG

D. Plants obtained through pollen culture are always haploid.

Answer: C

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35. A cybrid is hybrid carrying

A. Genomes and cytoplams of two different plants

B. Cytoplasms of two different plants

C. Cytoplasms of two different plants but genome of one plant

D. Genomes of two different plants

Answer: C

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36. Single cell proteins is

A. Protein synthesised by skin cell

B. A protein synthesised by liver cell

C. Protein synthesised by microorganisms

D. A protein synthesised by muscle cell

Answer: C

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37. The plant of Triticum aestivum is

A. Haploid

B. Diploid

C. Tetraploid

D. Hexaploid

Answer: D

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38. Cellular totipotency was first demonstreated by

A. T.Schwann

B. A.B . Leewenhoek

C. F.C . Steward

D. Robert hooke

Answer: C

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39. Blue revolution is related to

A. Apiculture

B. Fish production

C. Milk production

D. Crop rotation

Answer: B

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40. Slaughter house is known as

A. Abattoir

B. Apiary

C. Aviary

D. Arboretum

Answer: A

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41. Production of superior F_1 hybrids is called

A. Emasculation

B. Domestication

C. Inbreeding

D. Heterosis

Answer: D

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42. To increases lactation/milk yield, cow is given

A. Sorbitol

B. Stibestrol

C. Prolactin

D. Gonadotrophin

Answer: B

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43. Lymphoid lenosis in a poultry is a:

A. Bacterium

B. virus

C. Fungus

D. Helminth

Answer: B

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44. Blue revolution is

A. Increased exploitation of aquatic product

B. Increased grain production

C. Increased beef production

D. Increased milk production

Answer: A

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45. Callus can form plantlets through altering concentration of

A. Hormones

B. Amino acids

C. Vitamins

D. Sugars

Answer: A

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46. Principal cereal crop of india is

A. Wheat

B. Rice

C. Maize

D. Barley

Answer: B

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47. Triticale has been developed through cross between

A. Maize and Rye

B. Maize and grass

C. Rice and Rye

D. Wheat and Rye

Answer: D

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48. Which one of the following is not a fungal disease ?

A. Rust of wheat

B. Smut of Bajra

C. Black rot of crucifers

D. Red rod of sugarcane

Answer: C

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49. The instrument useful to sterilise glass wares and culture medium is

A. Autoclave

B. Incubator

C. Dry oven

D. Freezer

Answer: A

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50. Mutation can be induced by

A. Ethylene

B. Infra-red radiation

C. Gamma radiation

D. IAA

Answer: C

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Others

1. Probuitics are

A. Live microbial food supplement

B. cancer inducing microbes

C. new kind of food allergens

D. Safe antibiotics

Answer: A

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2. A viral diseases of polutry is

A. Coryza

B. New Castle disease

C. Pasteurellosis

D. Salmonellosis

Answer: B

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3. Chick pea is being grown in area where bacterial blight is common. What measurus (a-d) should be taken

(a) Spraying Bordeaux mixture

(b) Controlling Bordeaux mixture

(C) Controlling insect or vector of pathogen

(d) use seeds of disease resistant variety

A. c,d

B. a,d

C. b,c

D. a,b

Answer: B

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4. Somaclonal variations are the ones.

A. Caused by mutagens

B. Produced during tissue culture

C. Induced during sexual embryogeny

D. Caused by gamma rays

Answer: B

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5. Polyethylene glycol method is used for

A. seedless fruit production

B. energy production from sewage

C. gene transfer without a vector

D. biodiesel production

Answer: C

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6. which is not correctly matched ?

A. Explant -Excised plant part used for callus formation

B. Cytokinins -Root initiation in callus

C. Somatic embryos-Embryos produced by vegetative cells

D. Anther culture- haploid plants.

Answer: B

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7. Maize hybrids have been developed for higher amount of.

A. Methionine

B. Lysine

C. Leucine

D. Cysteine.

Answer: B

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8. Jaya and Ratna are the seimw-dwarf varieties of

A. Maize

B. Wheat

C. Rice

D. Barley

Answer: C

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9. When two unrelated individuals or lines are crossed, the performance of F_1 hybrids is often superior to both its parents. The phenomenon is called

A. Metamorphosis

B. Heterosis

C. splicing

D. Transformation

Answer: B

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10. Study statement a-d (about organic farming and find out the correct ones.

(a) Utilizes genetically modified crops like Bt cotton

(b) Uses only naturally produced input like compost

(c) Does not use pesticide and urea

(d) Produces vegetables rich in vitamins and minerals

A. a,b and d

B. c and d only

C. a and b only

D. b and c only

Answer: D

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11. Select the correct statement out of (a-d)

(a) single celled spirulina can produce large quantities of food rich in protein, minerals and vitamins.

(b) Body weight -wise the microorganism methylophilus methylotrophus produces several times more protein that a cow per day.

(c) Button mushroom is a rich source of vitamins.

(d) A rice variety has been developed which is very rich in calcium.

A. c and d

B. a, c and d

C. b,c and d

D. a and b

Answer: D

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12. Pusa komal variety of Cow pea is resistant to diseases

A. white rust

B. leaf curl

C. Bacterial blight

D. Hill bunt

Answer: C

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13. Which part is most suitable for raising virus free plants in micropropagation ?

A. Bark

B. Node

C. Vascular tissue

D. Meristem

Answer: D

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14. Green revolution occurred in India during

A. 1950 s

B. 1960s

C. 1970s

D. 1980s

Answer: B

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15. Apiculture is associated with groups of plants

A. Grapes, Maize , potato

B. Sugarcane, Paddy, Banana

C. Guava, Sunflower, Strawberry

D. Pineapple, Sugarcane, Strawbery

Answer: C

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16. Which is a breed of cattle ?

A. Aryshire

B. Ghagus

C. Kadaknath

D. Scampi

Answer: A

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17. In vitro clonal propagation in plants is characterized by

A. Microscopy

B. PCR and RAPD

C. Northern blotting

D. Electrophoresis and HPLC

Answer: B

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18. 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. Epidermis only

B. Apical meristem only

C. Palisade parenchyma

D. Both apical and axillary meristem

Answer: D

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19. Any part of a plant taken out and grown in a test tube under sterile condition in special nutrient media, is called

A. Callus

B. Clone

C. Adventitious tissue

D. Explant

Answer: D

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20. In biotechnology,Hybridoma technique was developed by

A. Robert crook and Edward jenner

B. Paul Ehrlich

C. George Cohler and C. milstein

D. Antony leeuwenhook

Answer: C

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21. For studying and understanding language of honeybees, the scientist who was awarded Noble prize, was

A. Rachael carson

B. D.muller

C. Carl von Frisch

D. T.A.Loomis

Answer: C

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22. The development of somatic embryos was first observed in carrot suspension cultures by

A. Steward et al (1958)

B. Reinert (1958)

C. Braun (1959)

D. Guha and Maheshwari (1964)

Answer: A

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23. 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

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24. A technique of micropropagation is

A. Protoplast fusion

B. Embryo rescue

C. Somatic hybridization

D. Somatic embryogenesis

Answer: D

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25. The crops engineered for glyphosate are resistant/tolarant to

A. Insects

B. Herbicides

C. Fungi

D. Bacteria

Answer: B

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26. Which of the following enhaces of induces fussion of protoplasts ?

A. IAA and kinetin

B. IAA and gibberellins

C. Sodium chloride and potassium chloride

D. Polyethylene glycol and sodium nitrate

Answer: D

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27. Racheal Carson's famous book "Silent Spring" is related to

A. Population explosion

B. ecosystem management

C. Pesticide pollution

D. Noise pollution .

Answer: C

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28. Interspecific hybridization is the mating of

A. superior males and females of different breeds

B. more closely related individuals within same breed for 4-6 generations

C. Animals within same breed without having common ancestors

D. Two different related species

Answer: D

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

A. Mrigala

B. Mackerel

C. Mystus

D. Mangur

Answer: B

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30. Which of the following is correctly matched for the produced by them ?

A. Methanobacterium : Lactic acid

B. Penicillin notatum :Acetic acid

C. Saccharomyces cerevisiae :Ethanol

D. Acetobacter aceti : Antibiotics

Answer: C

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31. Homozygous purelines in cattle can be obtained by

A. Mating of unrelated individuals of same breed.

B. Mating of individuals of different breed.

C. mating of individuals of different species.

D. mating of related individuals of same breed

Answer: D

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32. 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. co-667

B. sharbatisonora

C. Lerma rojo

D. A Basmati

Answer: D

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33. Somaclonal variations can be obtained by

A. application of colchicines

B. irradiations with gamma rays

C. tissue culture

D. hybridisation

Answer: C

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34. Somaclonal variation appears in plants

A. organisms produced through somatic hybridization

B. plants growing in highly polluted conditions

C. apomictic plants

D. tissue culture raised plants

Answer: D

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35. What is the average fat content of buffalo milk ?

A. 0.072

B. 0.045

C. 0.09

D. 0.109

Answer: A

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36. The scientific process by which crop plants are enriched with certain desirable nutrients is called

A. crop protection

B. breeding

C. Biofortification

D. Bioremediation

Answer: C

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37. Viral infection is usually absent in

A. phloem cells

B. xylem cells

C. pith cells

D. Apical meristem

Answer: D

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38. Which of the following does not lead to formation of new variety ?

A. Somatic hybridisation

B. Genetic engineering

C. Clonal propagation

D. UV-radiation

Answer: C

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39. Match the column and select the correct option

(i) Brassica	(I) Pusa Swarnim
(ii) Cauliflower	(II) Pusa Sadabahar
(iii) Chilli	(III) Pusa Subhra
(iv) Flat bean	(IV) Pusa sem-III

A. i-I,ii-II,iii-III,iv-IV

B. i-I,ii-III,iii-II,iv-V

C. i-II,ii-III,iii-IV,iv-I

D. i-I,ii-IV,iii-II,iv-III

Answer: B

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

A. planet culture

B. organ culture

C. micropropagation

D. macropropagation

Answer: C

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41. Explant is required to be disinfected before placing in culture. This is done by

A. autoclaving

B. ultra-violet rays

C. clorax or-hypochlorite

D. X-rays

Answer: C

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42. Which of the following is a viral disease of poultry birds ?

A. Anthrax

B. Ranikhet

C. Coccidiosis

D. None of these

Answer: B

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43. Which variety of rice was patented by a U.S. company even though the highest number of varieties of this rice is found in india ?

A. Sharbati sonara

B. Co-667

C. Basmati

D. Lema Roja

Answer: C

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44. Assertion : In plant tissue culture somatic embryos can be induced from any plant cell.

Reason : Any viable plant cell can differentiate into somatic embryos.

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

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

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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45. Assertion : Use of fertilizers greatly enhaces crop productivity.

Reason : Irrigation is very important in increasing crop productivity.

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

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

the assertion

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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46. Assertion : Fish meal is a rich source of protein for cattle and poultry.

Reason : Fish meal is produced from non-edible parts of fishes like fins, tail etc.

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

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

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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47. Assertion : Cattle breeds can be improved by super ovulation and embryo transplantation.

Reason : Superovolutation in high milk-yielding cows is induced by hormonal injection.

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

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

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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48. Assertion : In plant tissue culture somatic embryos can be induced from any plant cell.

Reason : Any viable plant cell can differentiate into somatic embryos.

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

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

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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49. Assertion : In case of vegetatively propagated crops, pure line selection is not requried.

Reason : Hybrid vigour is mostly used in vegetatively propagated plants.

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

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

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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50. Assertion : Somatic embros can be induced from any cell in plant tissue culture.

Reason : Any living plant cell is capable of differentiating into somatic embryos.

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

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

the assertion

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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51. Assertion : A major advantage of tissue culture is protoplast fusion.

Reason : A hybrid is formed by the fusion of naked protoplasts of two plant.

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

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

C. If the assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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