

GPLUS EDUCATION

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BIOLOGY

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

Single Correct Answer Type

- The cultivation of aquatic animals or plants for food is called
a) Aquaculture b) Pisciculture c) Sericulture d) Apiculture
- Differentiation of organs and tissues in a developing organism is associated with
a) Developmental mutations b) Differential expression of genes
c) Lethal mutations d) Deletion of genes
- Triticale is obtained by crossing wheat with:
a) Oat b) Barley c) Maize d) Rye
- Essential oils are made of:
a) Vitamins b) Auxins
c) Trace elements d) Aromatic volatile organic substances
- Mule is produced by
a) Inbreeding b) Artificial insemination
c) Interspecific hybridization d) Intraspecific hybridization
- Rearing and breeding of fish in ponds, tanks and artificial reservoirs is called:
a) Aquaculture b) Fishing c) Pisciculture d) Apiculture
- Bee wax is a product of importance
a) Industrial b) Domestic c) Medicinal d) All of these
- In 1963 during green revolution the increase in crop production of wheat was due to the introduction of
a) Semi-dwarf varieties of wheat
b) Jaya and Ratna
c) Both (a) and (b)
d) Sonalika and Kalyan Sona
- Safflower oil is obtained from the seeds of:
a) *Linum usitatissimum* b) *Lelianthus annus*
c) *Sesamum indicum* d) *Carthamus tinctorius*
- Which of the following is the main aim of evaluation of germplasm in plant breeding program?
a) To identify plants with desirable combination of characters
b) For effective exploitation of the natural genes
c) Both (a) and (b)
d) For collection of variability
- Spawning in fishes can be induced by:
a) TSH b) Thyroxine c) FSH and LH d) STH
- An old breeding technique is:
a) Introduction b) Selection c) Mutation breeding d) Hybridisation
- The botanical name for groundnut is:
a) *Indigofera tinctoria* b) *Crotolaria juncea*
c) *Arachis hypogea* d) *Astragalus gummifer*
- Saccharum barberi* was/is grown in
a) East India b) West India c) North India d) South India
- Need for breeding plants, to improve food quality are
I. lack of adequate food having adequate nutritional requirements in the world
II. majority people are unable to buy enough fruits, vegetables, legumes, fish and meat and thus suffer from

deficiencies or hidden hunger

III. essential micronutrients are absent from diet

Choose the correct option

- a) I and II b) I and III c) II and III d) I, II and III
16. Mating between two individuals differing in genotype to produce genetic variation is called
a) Domestication b) Incubation c) Hybridization d) Mutation
17. The cotton fibre from the cotton plant is obtained from:
a) Roots b) Stems c) Seeds d) Leaves
18. The cheapest high energy crop of India is:
a) Apple b) Guava c) Mango d) Banana
19. Emasculation of flowers is carried out through removal of:
a) Sigma b) Sepals and petals c) Anthers d) Entire organism
20. In protoplast fusion, the enzymes required are
a) Cellulose, hemicellulose, pectinase
b) Pectinase
c) Ligase, hemicellulose
d) Hemicellulose
21. Cows and buffaloes remain in heat for:
a) 24-36 hours b) 36-48 days c) 7-10 days d) 15-20 days
22. According to NCERT text, which of the following are selection and testing of superior recombination in plant breeding?
a) It involves selection of plants among the progeny of the hybrids with desired combination of characters
b) The hybrid are superior to both the parents this is called hybrid vigour
c) They are self-pollinated for several generations till they reach a stable of uniformity or homozygosity in order to avoid the segregation of characters in the future progeny
d) All of the above
23. Which of the following shows correct chronological order of the events occurring during callus culture?
a) Callus → Cell division → Explant → Addition of cytokinin → Cells acquire meristematic property
b) Explant → Cell division → Addition of cytokinin → Cells acquire meristematic property
c) Explant → Cell division → Callus → Addition of cytokinin → Cells acquire meristematic property
d) Callus → Explant → Cell division → Addition of cytokinin → Cells acquire meristematic property
24. Which of the following organisms is useful for us?
a) *Musca* b) *Bombyx* c) *Pheretima* d) *Periplaneta*
25. The part of the grain in cereals, where much of the protein lies is the:
a) Aleurone b) Endosperm c) Pericarp d) Embryo
26. 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) Form perfect homozygous individuals on diploidisation
27. The honey bees exhibit a type of dance to communicate the location of food. This is known as:
a) Tap dance b) Round dance and wagging dance
c) Break dance d) Waggle dance
28. The plant cell without the cell wall is called
a) Protoplast b) Cytoplast c) Nucleoplast d) None of these
29. The capacity of a cell explant to grow into a whole plant is called
a) Plant culture b) Tissue culture c) Cellular totipotency d) All of these
30. Close inbreeding usually results in reduction of fertility and productivity. This is called
a) Homozygosity b) Outbreeding
c) Inbreeding depression d) Outbreeding depression

31. Read the given statement about outcrossing
 I. It is the breeding between of animals with in the same breed but do not have common ancestors on either side of their pedigree up to 4-6 generation
 II. It is done to increase milk production and growth rate in animals
 Which of the statement given above is incorrect?
 a) Only I b) Only II c) I and II d) None of these
32. is a phenomenon by which genetic variations is achieved through changes in the base sequences with in genes, which creates a new character or trait absent in parental generation
 a) Apomixis b) Mutation c) Mutation breeding d) Heterosis
33. Methods of breeding for acquiring disease resistance are
 I. conventional breeding techniques
 II. mutation breeding
 III. radiation breeding
 Chose the correct option
 a) I and II b) I and III c) I only d) III only
34. Word livestock refers to
 a) Sheep and goat only b) Pigs and camels only
 c) Cattle and buffaloes only d) All of these
35. The animal most useful on difficult terrains is:
 a) Mule b) Yak c) Camel d) Elephant
36. Which of the following statement are the main objective of animals breeding?
 I. improved growth rate
 II. increased production of milk, meat, egg, wool, etc.
 III. superior quality of milk, meat eggs wool, etc.
 IV. improved resistance to various disease
 Choose the correct option
 a) I and II b) I, II and III c) II, III and IV d) I, II, III and IV
37. A beast of burden which needs little care is:
 a) Pig b) Donkey c) Mule d) Yak
38. Isinglass, a type of byproduct of fish industry is principally used for
 a) Feeding cattle, pigs and poultry
 b) Preparation of paints and varnishes
 c) Clarification of vinegar, wines and beer
 d) Production of insulin
39. The enzyme used for isolation of single cell from explant/cell is
 a) Pectinase b) Catalase c) Ligninase d) Maltase
40. The parameters carried out for managing dairy farm are
 I. selection of both the male and female animals having high yielding potential and resistance to diseases
 II. regular visits by a veterinary doctor
 III. each animal should be fed on a balance ratio
 IV. pay attention to good animal management and general supervision
 Which of the above statement are correct?
 a) I and II b) I, II and III c) II, III and IV d) I, II, III and IV
41. Ambergis is the secretion from the intestine of used in the manufacture of perfumes and other cosmetics:
 a) *Tachyglossus-Echidna* b) *Physetter-Sperm whale*
 c) *Musk-Deer* d) *Kangaroo-Macropus*
42. *Hisardale* is a new breed of ...A... developed in Punjab by crossing ...B... and ...C....
 Here A and C refers to
 a) A-sheep, B-Bikaneri ewes, C-Marino rams b) A-chicken, B-Dorking, C-Sussex

- c) A-chicken, B-leghorn, C-Plymouth rock
 d) A-cow, B-Jersey, C-Brown swiss
43. Economic importance of fish includes
 I. fish as food
 II. source of income
 III. aesthetic value
 Which of the above are correct?
 a) I and II b) I and III c) II and III d) I, II and III
44. Lysine and tryptophan are
 a) Proteins
 b) Non-essential amino acids
 c) Essential amino acids
 d) Aromatic and no acids
45. Which of the following disease resistance enhancement introduced by mutation in moong bean?
 I. Yellow mosaic virus
 II. Powdery mildew
 III. Black rust
 Choose the correct option
 a) I and II b) I and III c) II and III d) I, II and III
46. The conventional method of breeding for resistance includes
 I. screening the germplasm for resistant sources
 II. hybridization of selected parents
 III. selection and evaluation of the hybrids
 IV. testing and release of new varieties
 Choose the correct option
 a) I, II and III b) I, III and IV c) II, III and IV d) I, II, III and IV
47. The primary aim of animal breeding is to breed such animals which are able to produce
 a) Qualitative increase in the product
 b) Quantitative increase in the product
 c) Marketing of animal product
 d) Both (a) and (b)
48. The scientific name of maize is:
 a) Zingiber b) *Zea mays* c) Raphanus d) Daucas
49. What is the outcome of increased resistance power in crops?
 I. Enhance production
 II. Reduces the dependence on fungicides and bacteriocides
 III. Reduces the dependence on technical agricultural tools
 Choose the correct option
 a) I and II b) I and III c) II and III d) I, II and III
50. The insect that is not found in the wild state is:
 a) Lac insect b) Cochineal insect c) Honey bee d) Silk moth
51. Aim of plant breeding is to grow
 a) Disease free varieties b) High-yielding varieties
 c) Early-maturing varieties d) All of the above
52. Which of the following is not an oil seed?
 a) *Helianthus annuus* b) *Cocos nucifera* c) *Arachis hypogea* d) *Phaseolus aureus*
53. Improved varieties of wheat suitable for Indian environment have been developed by
 a) Euploidy and cloning b) Hybridization and mutation
 c) Polyploidy and hybridization d) Cloning and polyploidy
54. is used in the manufacture of many items including cosmetics, shaving creams and polishes of various kinds. The most appropriate word for filling the blank is

- a) Bee wax b) Honey c) Latex d) Resin
55. A milch breed of cow is:
a) Haryana b) Malvi c) Kankrej d) Halliker
56. is an industry that includes catching processing or selling of aquatic animals
a) Fisheries b) Apiculture c) Sericulture d) None of these
57. The embryo which develops from somatic cell is called
a) Somatic embryo b) Reproductive embryo
c) Clone embryo d) None of these
58. Hinny is a cross breed between:
a) Male donkey and female horse b) Female donkey and male horse
c) Male mule and female horse d) None of these
59. Science of altering the genetic pattern of plants in order to increase their value and utility for human welfare is called
a) Plant breeding b) Agriculture c) Plant genetics d) All of these
60. Which one of the following is the American poultry breed?
a) Australorp b) Rhode Island Red c) Minorca d) Aseel
61. 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 adrenalin/noradrenalin in its blood
d) Higher levels of thyroxina
62. Maximum cocoon and raw silk production is in:
a) China b) Japan c) U.S.S.R d) Brazil
63. Which of the following is a disease resistant, high yielding breed of the poultry developed in Karnataka?
a) Aseel b) White leghorn c) Giriraja d) Plymoth rock
64. Which one of the following products of apiculture is used in cosmetics and polishes?
a) Honey b) Oil c) Wax d) Royal jelly
65. Semi-dwarf varieties of rice were developed from
a) IR-8 b) Taichung Native-1 c) Both (a) and (b) d) Jaya and Ratna
66. Largest silk producing state of India is:
a) Karnataka b) Bihar c) Assam d) West Bengal
67. Larval form of silk moth is called:
a) Naiad b) Maggot c) Caterpillar d) Wiggler
68. Bhutia is a breed of:
a) Chicken b) Goat c) Sheep d) Horse
69. Which of following species is specially domesticated and reared for high economic importance?
a) *Apis indica* b) *Apis mellifera* c) *Apis dorsata* d) *Apis florea*
70. Passive, non-locomotory and non-feeding stage in life history of Silk moth is:
a) Caterpillar b) Imago c) Nymph d) Pupa
71. Regulations governing movement of diseased plant material are called:
a) Crop protection b) Quarantine c) Plant regulation d) Rotation
72. The larger distribution of clean quality milk all the world over can be said to be due to the great work of:
a) Robert Koch b) Leeuwenhoek c) Louis Pasteur d) Blackmann
73. Teak is obtained from plant:
a) *Shorea robusta* b) *Mangifera indica* c) *Tectona grandis* d) *Cedrus deodora*
74. Which of the following is not a true pulse crop?
a) *Vicia faba* b) *Phaseolus aureus* c) *Cassia fistula* d) *Cajanus cajan*
75. In tissue culture, roots can be induced by
a) Lower concentration of cytokinin and higher concentration of auxins
b) Only cytokinin and no auxins

- c) No cytokinin and only auxins
d) Higher concentration of cytokinin and lower concentration of auxins
76. Blue revolution
I. It is the rapid expansion intensive commercial aquaculture
II. Increase global food production and reduce widespread hunger
Which of the statements given above is/are correct?
a) Only I b) Only II c) I and II d) None of these
77. Cryopreservation is useful for:
a) Preservation of semen b) Very young foetuses
c) Living cells and body parts d) All the above
78. Keeping beehives in crop field during flowering period increases
a) Honey and wax yield b) Crop yield c) Both (a) and (b) d) Pollination in wheat
79. New varieties of plants can be produced by:
a) Selection and hybridization
b) Subjecting them to very heavy dose of radiation
c) Subjecting them to doses of radiation and selection
d) Subjecting them to continuous radiation
80. Hidden hunger can be defined as
a) Majority people are unable to buy enough fruits, vegetables, legumes, fish and meat and thus suffer from deficiency
b) People are unable to buy healthy drink item and thus suffer from deficiency
c) People are unable to buy vitamin and minerals medicines and thus suffer from deficiency
d) All of the above
81. Pure line breeds refer to:
a) Homozygosity and independent assortment b) Homozygosity only
c) Heterozygosity d) Heterozygosity and linkage
82. International Rice Research Institute (IRRI) is situated at
a) New York (USA) b) Tokyo (Japan) c) Manilla (Philippines) d) Hydrabad (India)
83. Pomato is a somatic hybrid of
a) Potato and onion b) Potato and tomato c) Potato and brinjal d) Potato and garlic
84. Real product of apiculture is
a) Honey b) Bee wax c) Both (a) and (b) d) Sugar
85. Protoplasts of two different species are fused in
a) Miropropagation b) Somatic hybridization
c) Clonal propagation d) Organography
86. The largest groundnut producing country is:
a) U.S.A. b) Brazil c) India d) Burma
87. A breeder evolving disease resistant variety will start with:
a) Working out yield of different varieties b) Go through the subject in library
c) Selection of parents d) Hybridisation
88. Which one of the following is the source of silk?
a) Eggs b) Caterpillar c) Cocoon d) Pupa
89. Self pollination results in:
a) Heterosis b) Hybridisation
c) Polyploidy d) Inbreeding depression
90. "Jaya" and "Ratna" developed for green revolution in India are the varieties of:
a) Maize b) Rice c) Wheat d) Bajra
91. Animal husbandry deals with
I. breeding of livestock buffaloes, cows, sheep, camels, etc., that are useful to humans
II. rearing, catching, selling, etc., of fish, molluscs and crustaceans

III. breeding of fowls for human use

Which of the statement give above are correct?

- a) I and II b) I and III c) II and II d) I, II and III
92. Rate of mutations is induced by means of certain agents called
a) Mutagens b) Carcinogen c) Oncogenes d) None of these
93. Which statement is correct about centre of origin of plant?
a) More diversity in improved variety b) Frequency of dominant gene is more
c) Climatic condition more favourable d) None
94. Consider the following statements
I. Breeding of animal is very important for animal husbandry
II. Both the male and female animals selected for breeding should be of superior quality
III. The word 'husbandry' means the management of domestic affair
IV. In our country, poultry mainly means chickens, domesticated for egg
V. Cows and buffaloes generally give more milk than goats and sheep
VI. The yellow colour of buffalo milk is due to carotene
Which of the statement given above are true and which are false?
I II III IV V VI
a) F F T T F F b) T T F F T F c) T T T F T F d) F T F T T F
95. Emasculation is removal of:
a) Stigma from flower of male parent b) Calyx from flower of male parent
c) Calyx from flower of female parent d) Stamens from flowers of female parent
96. Lac is:
a) Excretion of lac insect b) Dead body of lac insect
c) Body secretion of lac insect d) None of the above
97. The most common egg-type variety used for commercial production through out the world is
a) Leghorn b) Plymoth rock c) Cornish d) New Hampshire
98. In livestock breeding experiments which of the following stage is transferred to surrogate mothers
a) Unfertilized eggs b) 2 celled embryo
c) Fertilised egg d) 8 to 32 celled embryo
99. High yielding variety of rice is:
a) Dhann b) IR-8 c) *Tripsacum* d) *Digitaria*
100. A tool in crop improvement involving identification of genes, transfer and integration is:
a) Protoplast fusion and tissue culture b) Somaclonal hybridisation
c) Gene bank technology d) Genetic engineering
101. The part of the plant taken for tissue culture is called
a) Inplant b) Explant c) Transplant d) Both (b) and (c)
102. Which one is a rich source of vitamin-A?
I. Carrot II. Lemon
III. Beans IV. Spinach
Choose the correct option
a) I and II b) I and III c) I and IV d) I, II, III and IV
103. A group of animals which are related by descent and share many similarities are referred to as
a) Breed b) Race c) Variety d) Species
104. A good germplasm collection is essential for
a) A successful breeding programme
b) Hybridization
c) Selection of plant
d) Emasculation
105. The milch breeds of cattle are?
a) Mallikar, Nageri and Malvi b) Gir, Sahiwal and Deoni

- c) Kankrej, Haryana and Ongole
d) Tharparkar and Kangayam
106. Which one is the best silk?
a) Eri silk b) Mulberry silk c) Tasar silk d) None of the above
107. In order to obtain disease free plants through tissue culture methods the best technique is
a) Embryo culture b) Protoplast culture c) Meristem culture d) Anther culture
108. Which one of the following combinations 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, disease resistant
109. Hardening in tissue culture is
a) Keeping 30°-50°C temperature for about 30 minutes
b) Acclimatization of tissue culture plants slowly before growing in the field
c) Plunging the vials into water at 37°-40°C
d) None of the above
110. Fibre yielding plant is:
a) *Triticum* b) *Gossypium* c) *Pennisetum* d) *Rauwolfia*
111. A draught breed of cattle is:
a) Red Sindhi b) Gir c) Malvi d) Haryana
112. In plant breeding programmes, the entire collection of (plants/seeds) having all the diverse alleles for all genes in a given crop is called:
a) Cross-hybridisation among the selected parents
b) Evaluation and selection of parents
c) Germplasm collection
d) Selection of superior recombinants
113. Mutation breeding is carried out by
I. inducing mutations in plants by various means
II. screening the plant for resistance
III. selecting the desirable plant for multiplication and breeding
Choose the correct option
a) I and II b) I and III c) II and III d) I, II and III
114. *Saccharum barberi* was grown in ...A... India had ...B... sugar content and yield. *Saccharum officinarum* did grow in ...C... India, had thicker stem and ...D... sugar content. Here A to D refers to
a) A-North, B-poor, C-South, D-higher b) A-South, B-higher, C-North, D-poor
c) A-East, B-poor, C-West, D-higher d) A-West, B-higher, C-North, D-poor
115. Which one of the following is not an important Indian millet?
a) *Sorghum vulgare* b) *Pennisetum typhoides*
c) *Eleusine coracana* d) None of the above
116. Murrah is a breed of:
a) Cow b) Sheep c) Buffaloes d) Goat
117. Solid stem in wheat exhibits non-preference by
a) Jassids b) Fruit borer c) Stem borer d) Stem sawfly
118. Pearl oyster belongs to class:
a) Gastropoda b) Pelecypoda c) Scaphopoda d) Amphineura
119. Artificial insemination is better than natural insemination in cattle because:
a) Semen of good bulls can be provided everywhere
b) There is no likelihood of contagious diseases
c) It is economical
d) All the above
120. The dry fibrous residue left after the extraction of sugarcane juice is known as:

- a) Molasses b) Bagasse c) Masecuite d) None of the above
121. In 1960 to 2000 wheat production increased from ...A... tonnes to ...B... tonnes while rice production was from ...C... tonnes to ...D... tonnes
Here A to D refers to
a) A-11 million, B-75 million, C-35 million, D-89.5 million
b) A-14 million, B-80 million, C-40 million, D-92.5 million
c) A-10 million, B-71 million, C-35 million, D-89.5 million
d) A-15 million, B-70 million, C-40 million, D-90 million
122. Emasculation is related to
a) Pureline b) Mass selection c) Clonal selection d) Hybridization
123. It is now possible to breed plants and animals with desired characters through:
a) Ikebana technique b) Tissue culture
c) Genetic Engineering d) Chromosome Engineering
124. Common wild rock honey bee is:
a) *Apis mellifera* b) *Apis indica* c) *Apis dorsata* d) *None of the above*
125. Anatomically, cotton fibres are:
a) Bast fibres b) Xylem fibres c) Epidermal hairs d) Pith cells
126. Which of the following is considered as the root of any breeding program
a) Genetic variability b) Cross hybridization c) Hybrid vigour d) Heterosis
127. India's wheat yield revolution in the 1960s was possible primarily due to
a) Hybrid seeds
b) Increased chlorophyll content
c) Mutations resulting in plant height reduction
d) Quantitative trait mutations
128. *Triticale* has been developed through intergeneric hybridization between:
a) Wheat and Rye/*Secale* b) Wheat and *Aegilops*
c) Wheat and Rice d) Rice and Maize
129. In tissue culture method, the embryoids formed from pollen grain is called
a) Cellular totipotency b) Organogenesis c) Triple fusion d) Callus culture
130. Microbes like *Spirulina* can be grown on material like
I. waste water from potato processing plants
II. straw
III. animal manure and sewage
IV. molasses
Choose the correct option
a) I and II b) I, II and III c) II, III and IV d) I, II, III and IV
131. Technique of silk production from the cocoons of silkworms was first known to:
a) India b) China c) United Kingdom d) U.S.A.
132. Indian rubber tree belongs to:
a) Euphorbiaceae b) Malvaceae c) Tiliaceae d) Moraceae
133. The controlled breeding and rearing of fish is called
a) Aquaculture b) Pisciculture c) Sericulture d) Apiculture
134. The hexaploid wheat species from which modern types of wheat have been developed:
a) *Triticum boeoticum* b) *Triticum spelta* c) *Triticum aestivum* d) *Triticum squarrosa*
135. Wonder wheat is new wheat variety developed by
a) Mexico's International Wheat and Maize Improvement Centre
b) Indian National Botanical Research Institute
c) Australian Crop Improvement Centre
d) African Crop Improvement Centre
136. Somatic hybridization is a technique of

- a) Natural breeding b) Natural pollination c) Artificial pollination d) Artificial breeding
137. Some plants developed by meristem culture are
a) Banana b) Sugarcane c) Potato d) All of these
138. Culturing of isolated plant organ is called
a) Explant culture b) Inplant culture c) Organism culture d) Organ culture
139. A man-made allopolyploid cereal crop is
a) *Hordeum vulgare* b) *Triticale* c) *Raphanobrassica* d) *Zea mays*
140. Honey
I. is a natural valuable tonic for human body
II. contains various substances of high medicinal value, including important enzymes, vitamins and disaccharide sugars mainly glucose and fructose
III. a number of ayurvedic medicines are taken with honey
Which of the statement given above are correct?
a) I and II b) I and III c) II and III d) I, II and III
141. Cereals and millets are mainly deficient in which type of amino acids
a) Sulphur containing amino acids-methionine and cysteine
b) Tryptophan
c) Both (b) and (c)
d) Lysine
142. Which one of the following is a disease of poultry?
a) Foot and mouth disease b) Pebrine disease
c) Anthrax d) Ranikhet disease
143. Through which method more numbers of female plants can be produced in papaya?
a) Spraying ethephon b) Genetic engineering c) Polyploidy breeding d) Tissue culture
144. Callus can form shoot or root by changing ratio of:
a) Auxin to gibberellin b) Auxin to cytokinin
c) Cytokinin to ethylene d) Gibberellins to cytokinin
145. Gestation period for buffalo is:
a) 9 months b) 14 months c) 10 months d) 21-22 months
146. In tissue culture, single germinating pollen grain will form a plant
a) Diploid b) Haploid c) Triploid d) Tetraploid
147. The scientific name of lac insect is:
a) *Tachardia lacca* b) *Bombyx mori* c) *Cimex lectularis* d) *Pediculus pithiris*
148. In case of plant breeding cross hybridization is a time consuming and tedious process because
a) Pre-existing genetic variability is collected from wild varieties, species and relatives of the cultivated crop species
b) It involves the selection of plants among the progeny of the hybrids with desired combination of characters
c) It involves emasculation and bagging techniques to transfer desired pollen grains to a desired plant
d) Both (a) and (b)
149. The germplasm collections are usually maintained at a ...A... temperature in the form of ...B... Here A and B refers to
a) A-low, B-plant b) A-low, B-seed c) A-high, B-plant d) A-high, B-seed
150. Tassar silk moth belongs to the family:
a) Bombycidae b) Sturnidae c) Hymenoptera d) Diptera
151. GDP stands for
a) Gross Domestic Product b) Grant Domestic Payment
c) Grant Domestic Product d) Gross Domestic Payment
152. The Indian Agricultural Research Institute, New Delhi has released several fortified vegetable crops that are rich in vitamins and minerals. These are

- I. Vitamin-A enriched carrot, spinach, pumpkin
- II. Vitamin-C enriched bitter gourd, bathua, mustard tomato
- III. Iron and calcium enriched spinach and bathua
- IV. Protein enriched broad beans, French bean, garden pea

Choose the correct option

- a) I, II and III b) I, III and IV c) II, III and IV d) None of these
153. The percentage of proteins in the egg white is:
a) 12% b) 35% c) 64% d) 70%
154. Norin-10 gene of dwarfness in wheat was originated in
a) India b) Japan c) Mexico d) USSR
155. Which one is not included in animal husbandry?
I. Poultry farming
II. Fish farming
III. Organic farming
IV. Molecular farming
- Codes**
a) I and II b) I and III c) II and III d) III and IV
156. The inherent capacity of a cell to regenerate a new whole organism is called
a) Ontogeny b) Totipotency c) Phylogeny d) Proliferation
157. The botanical name of sweet flag, commonly used as antispasmodic, expectorant and remedies for asthma and chronic diarrhoea is:
a) *Berberis aristaat* b) *Ferula asafoetida* c) *Acorus calamus* d) *Gentiana lutea*
158. In India the best aquarium is located at:
a) Z.S.I. Kolkata b) Tarapur, Mumbai c) Chennai d) Vishakhapatnam
159. The method of growing or producing thousands of plants through tissue culture is called
a) Totipotency b) Somaclones c) Micropropagation d) Macropropagation
160. In mutation breeding, mutations are induced by using chemical like
a) Aniline b) Alcohol c) Graphene d) Both (a) and (b)
161. Improved varieties of wheat suitable for Indian climates have been developed by:
a) Hybridisation and mutation b) Mutation and cloning
c) Cloning of polyploids d) Polyploidy and hybridisation
162. *Spirulina* is a
a) Cyanobacteria b) Fungi c) Protozoan d) Brown algae
163. The method maximum used in cattle breeding is:
a) Random breeding b) Artificial insemination
c) Controlled breeding d) Super ovulation and embryo transplant
164. The nutrient medium for tissue culture should have
I. sucrose
II. inorganic salts
III. growth regulators
IV. vitamins
V. amino acids
Choose the correct option
a) I, II, III, IV and V b) II, III, IV and V c) I, II, III and IV d) I, II, IV and V
165. Which of the following plants is an oil as well as fibre yielding crop?
a) *Linum usilatissum* b) *Sesamum indicum* c) *Helianthus annus* d) *Brassica juncea*
166. Choose breeding
I. refer to the cross of superior male of one breed with superior female of another breed
II. it helps of accumulate the desirable genes of the two breeds into a progeny
III. the progeny may be used for commercial production

- Which of the statements given above are correct?
a) I and II b) I and III c) II and III d) I, II and III
167. Which one of following is our indigenous breed of chicken?
a) Plymouth Rock b) White Leghorn c) Aseel d) Rhode Island Red
168. Strategic steps for inbreeding are
I. identify superior male and superior female of the same breed
II. these are than mated in pair
III. evaluate the progeny obtained from the mating to identify superior males and females
IV. In cattle superior female is the cow or buffalo that produce more milk per lactation and superior male is the bull that gives rise to superior progenies
V. Superior progenies obtained are further mated
Arrange the above given steps in correct sequence and select the correct answer
a) I → III → II → IV → V b) I → II → III → IV → V
c) III → I → II → IV → V d) III → II → I → V → IV
169. Single cell protein is an alternative protein source for animal and human nutrition formed from certain beneficial microorganisms like
a) *Spirulina* b) *Methylophilus methylotrophus*
c) *Candida utilis* d) All of the above
170. The scientific process by which crop plants are enriched with certain desirable nutrients is called
a) Crop protection b) Plant breeding c) Biofortification d) Bioremediation
171. Central Food Technological Research Institute is located at:
a) Izatnagar b) Lucknow c) Dehradun d) Mysore
172. Hairy leaves of many plants are associated with providing resistance from
a) Insect pests b) Bacteria c) Virus d) Bollworm
173. Best method to increase crop yield is (*e. g.* wheat)
a) Using tractors b) Sowing seeds of improved varieties
c) Eradication of weeds d) Reduce ration holders
174. A superior female, in the case of cattle is the ...A... that produces more milk per lactation. On the other hand, a superior ...B... is that ...C... which gives rise to ...D... as compared to those of other males. Here A and D refers to
a) A-cow, B-male, C-bull, D-superior progeny
b) A-buffalo, B-male, C-bull, D-inferior progeny
c) A-cow, B-male, C-bull, D-inferior progeny
d) A-cow, B-male, C-bull, D-normal progeny
175. Natural silk contains:
a) Potassium b) Phosphorus c) Nitrogen d) Magnesium
176. The International Rice-8 (IR-8) has been introduced in India from:
a) Taiwan b) Philippines c) Mexico d) Japan
177. In maize, presence of high aspartic acid, low nitrogen and sugar content protect them from
a) Aphids b) Fruit borer c) Jassids d) Stem borer
178. The leaf juice of which one of the following plants is used for removal of opacity of cornea of the eye?
a) *Arachis hypogea* b) *Gossypium hirsutum*
c) *Atropa bellodona* d) *Rauwolfia serpentina*
179. 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 rot of sugar cane
180. Sonalika and Kalyan Sona are the varieties of
a) Wheat b) Rice c) Millet d) Tobacco
181. The most commonly maintained species of bee by bee keepers is
a) *Apis mellifera* b) *Apis dorsata* c) *Apis indica* d) *Apis florae*

200. Best source for dietary protein for a vegetarian is:
a) Soya Bean b) Gram c) Groundnut d) Milk
201. The various methods of crop improvement are
I. selection II. Hybridization
III. polyploidy IV. mutation breeding
V. genetic engineering
Choose the correct option
a) I, II, III, IV and V b) I, II, III and V c) II, III, IV and V d) I, III, IV and V
202. Indian Agriculture Research Institute is situated at:
a) Chennai b) New Delhi c) Bangalore d) Shillong
203. Apiculture means
a) Rearing of honey bees b) Rearing of silkworm c) Rearing of lac insect d) None of these
204. Ishingless is obtained from:
a) Liver of frog b) Scales of fishes c) Air bladder of fishes d) Skin of shark
205. The advantages of single cell proteins are
I. easy to grow
II. nutrient rich
III. high yield
Choose the correct option
a) I and II b) I and III c) II and III d) I, II and III
206. Meristem culture is practiced in horticulture to get
a) Somaclonal variation b) Haploids c) Virus-free plants d) Slow-growing callus
207. Examples of high-yielding and disease resistant wheat varieties are
a) Sonalika b) Kalyan Sona c) Both (a) and (b) d) Jaya
208. The length of silk fibre which surrounds a cocoon is about:
a) 800 to 1200 yards b) 8000 to 12000 yards c) 800 to 1200 feet d) 8000 to 12000 metres
209. The objective of biofortification is to improve
I. protein content and quality
II. oil content and quality
III. vitamin content
IV. micronutrients and mineral content
Choose the correct option
a) I, II and III b) I, II and IV c) II, III and IV d) I, II, III and IV
210. Crop improvement is possible through:
a) Judicious combination of selection, introduction and hybridisation
b) Selection
c) Scientific improvement of cultivated plants
d) Introduction
211. Maize grain is rich in:
a) Niacin b) Thiamine c) Tryptophan d) Lysine
212. In callus culture, roots can be induced by the supply of
a) Auxin b) Cytokinin c) Gibberellin d) Ethylene
213. Semi-dwarf varieties of rice were developed from
I. IR-8 II. Taichung Native-1
III. Jaya IV. Sonalika
Choose the correct options
a) I and II b) II and III c) I and III d) III and IV
214. Percentage of proteins in the fish meal is:
a) 15-20% b) 25-50% c) 40-50% d) 55-70%

215. India's wheat yield revolution in 1960s was possible primarily due to
 a) Increased chlorophyll content
 b) Mutations resulting in plant height reduction
 c) Quantitative trait mutations
 d) Hybrid seeds
216. The plant from which chewing gum is made:
 a) *Achras saptoa*
 b) *Euphorbia splendens*
 c) *Dalbergia sissoo*
 d) *Butea frondosa*
217. Quinine is obtained from bark of:
 a) *Cinchona*
 b) *Atropa belladonna*
 c) *Magnifera indica*
 d) *Cedrella toona*
218. The largest land animal is:
 a) Camel
 b) Elephant
 c) Rhino
 d) Python
219. The three major carps.—*Cattla*, *Labeo*, and *Cirhinus* grown in the same pond are due to:
 a) There is no competition among them for the food material
 b) Their feeding habits are different
 c) They live in different habitats
 d) None of the above
220. Silkworm spins its cocoon:
 a) From inside to outside
 b) Outside to inside
 c) Random
 d) Inside
221. Single cell proteins refers to
 a) A specific protein extracted from pure culture of single type of cells
 b) Sources of mixed proteins extracted from pure or mixed culture of organisms or cells
 c) Proteins extracted from a single cell
 d) A specific protein extracted from a single cell
222. Potato and tomato are native of:
 a) Canada
 b) North America
 c) South America
 d) China
223. Which of the following is not an important characteristic of the green revolution?
 I. Mechanised agriculture
 II. Hybrid seeds
 III. Slash and burn
 Which of the above are correct?
 a) Only I
 b) Only II
 c) Only III
 d) I and III
224. A hybrid where the cytoplasm of two parent cell are fused by retaining only one parental nucleus is called
 a) Asymmetric somatic hybrid
 b) Cytoplasmic hybrid
 c) An interbreed
 d) Symmetric somatic hybrid
225. Fibres are made of:
 a) Parenchyma
 b) Chlorenchyma
 c) Sclerenchyma
 d) Collenchyma
226. The deficiency of essential micronutrients specially iron, iodine, zinc and vitamin-A in food
 I. increases risk for disease
 II. reduces mental ability
 III. reduces life span
 Choose the correct option
 a) I, II and III
 b) I and III
 c) Only
 d) I and II
227. For producing protoplasts from pant cells, which of the following are required?
 a) Amylase and pectinase
 b) Cellulase and proteinase
 c) Cellulase and pectinase
 d) Cellulase and amylase
228. The plants produced from tissue culture are genetically identical to the original plant from which they are grown so they are called
 a) Somaclones
 b) Clones
 c) Para clones
 d) None of these

229. Which of the statement about breeding is wrong?
 a) By inbreeding purelines cannot be evolved
 b) Continued inbreeding, especially close inbreeding reduces fertility and productivity
 c) Cross-breeding allows desirable qualities of two different breeds to be combined
 d) Inbreeding exposes harmful recessive genes that are eliminated by selection
230. Two temperate cereals, sometimes cultivated at high altitude in the tropics, are:
 a) *Avena sativa* and *Secale cereale* b) *Zea mays* and *Eleusine coracana*
 c) *Panicum milaceum* and *Coix lachrayma* d) *Sorghum bicolour* and *Panicum milaceum*
231. Gambusia is a:
 a) Predator on mosquito larvae b) Pest of fishes
 c) Parasite on crab d) Pathogenic protozoan
232. Sugar obtained from sugarcane is:
 a) Fructose b) Glucose c) Sucrose d) Galactose
233. When cross is made between two species of the same genus, then the cross is known as
 a) Intraspecific hybridization b) Interspecific hybridization
 c) Intergeneric hybridization d) Intervarietal hybridization
234. Vegetables are chief source of:
 a) Fats and minerals b) Fats and vitamins
 c) Minerals and vitamins d) Proteins and vitamins
235. The entire collection having all the diverse alleles for all genes in a given crop is called
 a) Gene collection b) Germ collection c) Germplasm collection d) Plasma collection
236. The chances of catching bird flu from a properly cooked (above 100°C) chicken and eggs are
 a) Very high b) High c) Moderate d) Nil
237. Undifferentiated mass of plant cells grown on nutrient medium, is called
 a) Callus b) Bud c) Clone d) Scion
238. The totipotency of a cell refers to the
 a) Flowering in a culture medium
 b) Development of fruit from a flower in a culture medium
 c) Development of an organ from a cell in culture medium
 d) Development of all tissues of all kinds from a cell in a culture medium
239. A milk-like preparation can be made from the seeds of:
 a) Gram b) Soyabean c) Grapes d) Barley
240. Increase in food production is necessary because of:
 a) The better land available b) The population increase
 c) The increased money power d) The better irrigation facilities
241. Silk glands are modified:
 a) Salivary glands b) Anal glands c) Colleterial glands d) Mushroom glands
242. Consider the following statements
 I. Solid stem in wheat exhibits non-preference by stem sawfly
 II. In cotton, smooth leaf and absence of nectar repel bollworms
 III. In maize, high aspartic acid, low nitrogen and sugar content protect them from stem borers
 Which of the statements given above are correct?
 a) I, II and III b) I and II c) I and III d) II and III
243. Arhenotoky is a type of:
 a) Parthenogenesis found in honey bees, wasps and ants
 b) Parthenogenesis found in every insect
 c) Parthenogenesis found in mosquitoes
 d) Parthenogenesis found in butterflies
244. Zebu cattle is:
 a) Water Buffalo b) Indian Buffalo c) Cow d) Sheep

245. Mule is produced from a cross between ...A... and ...B... Here A and B refers to
- | | |
|----------------------------------|-----------------------------------|
| a) A-female horse; B-male donkey | b) A-male horse; B-female donkey |
| c) A-male horse; B-female horse | d) A-male donkey; B-female donkey |
246. *Triticum aestivum*, the common breed of wheat is
- | | |
|----------------------------------|-----------------------------------|
| a) Triploid with 21 chromosomes | b) Tetraploid with 28 chromosomes |
| c) Hexaploid with 42 chromosomes | d) Diploid with 14 chromosomes |
247. In male and female animals of two different related species are mated
- | | |
|------------------------|--------------------------------|
| a) Random breeding | b) Artificial insemination |
| c) Controlled breeding | d) Interspecific hybridisation |
248. Central Silk Research and Training Institute (CSRTI) is located at:
- | | |
|-----------------|--------------------------|
| a) Assam | b) Bahrapur |
| c) Tarai region | d) Shanthivials (Mysore) |
249. Water Buffalo is:
- | |
|---|
| a) European breed of buffalo that prefers living in water for most of the day |
| b) Buffalo like animal living in rivers |
| c) Llama |
| d) Buffalo |
250. In lac insect, lac is produced from:
- | | |
|---------------------------|----------------------|
| a) Abdominal glands | b) Salivary glands |
| c) Skin glands of abdomen | d) None of the above |
251. Mode of nutrition of explant before organogenesis is
- | | | | |
|-------------------|----------------|------------------|------------------|
| a) Photosynthetic | b) Autotrophic | c) Heteromorphic | d) Heterotrophic |
|-------------------|----------------|------------------|------------------|
252. Most commercial silkworm strain is:
- | | | | |
|----------------|---------------|------------------|-----------------|
| a) Uni-voltine | b) Vi-voltine | c) Multi-voltine | d) All of these |
|----------------|---------------|------------------|-----------------|
253. Which among the following is the real product of honey bee?
- | | | | |
|-----------|------------|----------|-------------|
| a) Pollen | b) Bee wax | c) Honey | d) Propolis |
|-----------|------------|----------|-------------|
254. One of the alternate sources of protein for animal and human nutrition is
- | | | | |
|------------------------|--------------|------------------------|-----------------|
| a) Single cell protein | b) Proteomix | c) Double cell protein | d) All of these |
|------------------------|--------------|------------------------|-----------------|
255. The fibre crop occupying the largest area in India is as under:
- | | | | |
|---------|---------|-----------|-----------|
| a) Jute | b) Flax | c) Cotton | d) Simbal |
|---------|---------|-----------|-----------|
256. On the basis of unity, Nagapuri buffaloes are categorised as:
- | | | | |
|------------|-----------------|-------------------|------------|
| a) Grazers | b) Dual purpose | c) Draught cattle | d) Milkers |
|------------|-----------------|-------------------|------------|
257. The fruits of the plants which yield oil and fibres:
- | | | | |
|------------------------------|-------------------------|----------------------------|--------------------------|
| a) <i>Phoenix sylvestris</i> | b) <i>Areca catechu</i> | c) <i>Metroxylon safus</i> | d) <i>Cocos nucifera</i> |
|------------------------------|-------------------------|----------------------------|--------------------------|
258. In mutation breeding, mutation are induced by using radiation like
- | | | | |
|----------|-----------|------------|-----------------|
| a) Gamma | b) X-rays | c) UV-rays | d) All of these |
|----------|-----------|------------|-----------------|
259. The genetic ability of a plant to prevent pathogen from causing disease is called
- | | | | |
|---------------|---------------|--------------|------------------|
| a) Resistance | b) Prevention | c) Pathology | d) None of these |
|---------------|---------------|--------------|------------------|
260. The Indian carp is:
- | | | | |
|--------------|----------|------------|------------|
| a) Scoliodon | b) Labeo | c) Torpedo | d) Pristis |
|--------------|----------|------------|------------|
261. Poultry includes:
- | | |
|------------------------------------|------------------------------------|
| a) Fowl, duck, tortoise and turkey | b) Fowl, duck, pigeon and tortoise |
| c) Duck, fowl, tortoise and turtle | d) Fowl, duck, turkey and pigeon |
262. Phytotron is
- | | |
|-----------------------------------|---------------------------|
| a) A controlled condition chamber | b) A leaf culture process |
| c) A special culture of plants | d) A root culture process |
263. MOET stands for
- | |
|--|
| a) Multiple Ovulation Embryo Transfer technology |
| b) More Ovulation Embryo Transfer technology |
| c) Multiple Ovulation Embryo Test technology |

- d) None of the above
264. *Nosemia sp.* a protozoan produces diseases in:
 a) Silk moth
 b) Honey bee
 c) Both silk moth and honey bee
 d) Lac insect
265. Colchicine brings about:
 a) Gene mutations
 b) Chromosome aberrations
 c) Quick replication
 d) Duplication of chromosomes
266. Central Sugarcane Breeding Research Institute is situated at:
 a) Coimbatore
 b) Lucknow
 c) Delhi
 d) Bhopal
267. Silk glands of silkworm are modified:
 a) Crop glands
 b) Salivary glands
 c) Gastric glands
 d) Intestinal glands
268. Consider the following statements
 I. The honey bees are pollinators of many crop species such as sunflower, *Brassica*, apple and pear
 II. Keeping beehives in crop fields during flowering period increases both crop yield and honey yield
 III. A successful bee keeping requires management of beehives during different seasons
 Which of the statements given above are correct?
 a) I, II and III
 b) I and II
 c) II and III
 d) I and III
269. Which of the following diseases in poultry is caused by nutritional deficiency?
 a) Perosis
 b) Fowl pox
 c) Coryza
 d) Aspergillus
270. Hereditary variations can be got with the help of:
 a) X-rays
 b) DDT
 c) Auxin
 d) Gibberellin
271. Eri silk is produced by:
 a) *Bombyx mori*
 b) *Attacus ricini*
 c) *Anthenea roylei*
 d) *Anthenea paphia*
272. Consider the following statements
 I. Semen is preserved for artificial insemination by heating
 II. Most common bee species reared in India is *Apis indica*
 III. Example of interspecific hybridization is mule
 Which of the statements given above is/are not correct?
 a) Only I
 b) Only II
 c) I and II
 d) II and III
273. Genetic diversity of agricultural crops is threatened by:
 a) Extensive intercropping
 b) Intensive use of fertilizers
 c) Introduction of high yielding varieties
 d) Intensive use of biopesticides
274. In high milk giving breeds of females and high quality meat giving bulls have been bred successfully to obtain a better breed in short time
 a) MOET
 b) Artificial insemination
 c) Cross-breed
 d) Induced mutation
275. The botanical name of popcorn is:
 a) *Zea mays* var. *everta*
 b) *Zea mays* var. *tunicata*
 c) *Zea mays* var. *indentata*
 d) *Zea mays* var. *amylacea*
276. Most common honey bee species in India
 a) *Apis indica*
 b) *Apis florea*
 c) *Apis mellifera*
 d) *Apis dorsata*
277. Pathogen free plants are obtained from:
 a) Callus culture
 b) Embryoid culture
 c) Shoot apex culture
 d) Root apex culture
278. When breeding is between different breeds, it is called
 a) Inbreeding
 b) Outbreeding
 c) Outcrossing
 d) Cross breeding
279. The new sugar cane varieties had the qualities like
 I. high yield
 II. thick stem
 III. high sugar content
 IV. ability to grow in North India

Choose the correct option

- a) I, II and III b) II, III and IV c) I, II and IV d) I, II, III and IV
280. Single cell proteins provide food rich in
 I. protein
 II. minerals
 III. fats
 IV. carbohydrates and vitamins
 Choose the correct option
 a) I and III b) II, III and IV c) I, III and IV d) I, II, III and IV
281. Breeding crops for improved nutritional quality is referred to as
 a) Biomagnification b) Biome c) Biofortification d) Biomining
282. Maize grain is deficient in:
 a) Tryptophan and lysine b) Niacin and thiamine
 c) Lysine and thiamine d) Tryptophan and thiamine
283. Crop plants grows in monoculture are:
 a) Low in yield b) Characterised by poor root system
 c) Free from intraspecific competition d) Highly prone to pests
284. Cassava is a:
 a) Stem vegetable b) Root vegetable c) Leaf vegetable d) Flower vegetable
285. Earliest animal to be domesticated was:
 a) Goat b) Dog c) Horse d) Cat
286. Rinderpest is the disease of:
 a) Cattle b) Poultry c) Fish d) Camel
287. Composite fish farming is called:
 a) Polyculture b) Pisciculture c) Monoculture d) None of these
288. Embryo culture is employed in:
 a) Clonal propagation b) Induction of somaclonal variations
 c) Overcoming hybridisation barriers d) Developing virus free plants
289. The yellow colour of cow milk is due to the presence of
 a) Carotene b) Albumin c) Casein d) Lactose
290. Main composition of lac is:
 a) Glue, pigment and sugar b) Wax, pigment and glue
 c) Resin, pigment, wax and glue d) Resin, sugar and wax
291. Quite often pulse-crops are not manured with nitrogenous fertilizers. It is so because:
 a) These do not require nitrogen b) These do not need nitrates or nitrites
 c) These have nodulated roots d) These do not have nodulated roots
292. Fisheries includes rearing, catching, sellings, of
 a) Fishes b) Molluscs c) Crustaceans d) All of these
293. The wax gland in honey bee is found in
 a) Worker and queen b) Queen c) Drons d) Worker
294. Inbreeding is
 a) Crossing between two unrelated species b) Crossing between two closely related individuals within the same breed
 c) Crossing between different breeds d) None of the above
295. When the breeders wants to incorporate desired characters into the crop plants, they should
 I. increase yield and improve
 II. increased tolerance to salinity
 III. resistance to pathogen viruses, fungi and bacteria
 IV. increased tolerance to insect pests
 Choose the correct option

- a) I and II b) I, II and III c) II, III and IV d) All of these
296. Main protein type found in egg white is:
a) Ovalbumin b) Canalbumin c) Phosvitin d) Lipovitellin
297. The process of fusion of protoplast of somatic cells obtained from different varieties or species of plant on a suitable nutrient medium *in vitro* to develop a somatic hybrid is called
a) Somatic hybridization b) Cross hybridization
c) Intravarietal hybridization d) Interspecific hybridization
298. Pisciculture is rearing and production of
a) Fishes b) Birds c) Reptiles d) Cattles
299. Which factors are responsible for development of disease in a plant?
I. Susceptible plant
II. Aggressive pathogen
III. Excess amount of fertilizer
IV. Conductive environment
Choose the correct option
a) I, II and III b) I, II and IV c) II, III and IV d) I, III and IV
300. Which of the following is not a marine fish?
a) Hilsa b) Catla c) Pomfret d) Mackerel
301. The important parameters of poultry farm management are given below
I. selection of disease free, suitable breeds
II. proper and safe condition of farm
III. proper food and water
IV. temperature of poultry shed should be high for egg laying
Which of the statement given above is true and which is false?
I II III IV
a) T T T F b) F T T T c) T T F T d) T F T F
302. SCP production is based on industrial effluents so it helps to minimize
a) Environmental pollution b) Production of diseased crop
c) Nutrient medium for tissue culture d) All of the above
303. SCP reduces the pressure on agricultural production systems for the supply of the required
a) Vitamins b) Carbohydrate c) Minerals d) Proteins
304. The most used domesticated animal by Eskimos is:
a) Cow b) Sheep c) Goat d) Husky
305. Which of the following methods is/are used in recovery of healthy plants from diseased plants?
a) Embryo culture b) Meristem culture c) Suspension culture d) Anther culture
306. Poultry includes
a) Chicken b) Duck c) Turkey d) All of these
307. Scientists are trying to get hybridization between tomato and potato. The most accurate name of the recusant would be
a) Topato b) Topemo c) Potamo d) Pomato
308. Micropropagation is
a) Propagation of microbes *in vitro* b) Propagation of plants *in vitro*
c) Propagation of cells *in vitro* d) Growing plants on smaller scale
309. A collection of plants and seeds having diverse alleles of all the genes of a crop is called:
a) Herbarium b) Germplasm c) Gene library d) Genome
310. Hybrid breed of cattle is:
a) Sunandini b) Holstein c) Brown Swiss d) Kankrej
311. Select the false statement
a) Hybrid maize, jowar and bajra have been successfully developed in India
b) *Saccharum barberi* was originally grown in north India, but had poor sugar content and yield

- c) Agriculture accounts for approximately 33% of India's GDP and employs nearly 62% of the population
d) None of the above
312. The term 'totipotency' refers to the capacity of a
a) Bud to generate whole plant
b) Cell to generate whole plant
c) Seed to germinate whole plant
d) Cell to enlarge in size
313. Which of the following is resistance to leaf and strip rust
a) Himgiri
b) Pusa Komal
c) Pusa Sadabahar
d) Pusa Shubra
314. Removal of anther of some flowers during plant breeding is
a) Emasculation
b) Anthesis
c) Pollination
d) For collection of pollen
315. The animal close to human beings which is cloned by an American scientist *Dr. Don Wolf* 1996 is:
a) Gorilla
b) Chimpanzee
c) Gibbon
d) Monkey
316. Majority of people suffer from protein, vitamins and micronutrient deficiencies. Their food does not contain essential micronutrients specially
I. iron
II. iodine
III. zinc
IV. vitamin-A
Which of the above are correct?
a) I, II and III
b) I, III and IV
c) II, III and IV
d) I, II, III and IV
317. In plant biotechnology, PEG is used in
a) Protoplast isolation
b) Cell culture preparation
c) Protoplast fusion
d) Hardening
318. Aim of plant breeding is to:
a) Control pollution
b) Keep soil fertile
c) Produce improved varieties
d) To maintain wild plants
319. Choose the scientific name of a microorganism which produces high quality of protein
a) *Spirulina*
b) *Chara*
c) Agar-agar
d) *Ephedra*
320. Disease resistant crop is obtained by
a) Crossing with new varieties
b) Crossing with wild varieties
c) Injecting with organic compounds
d) None of the above
321. More than 70% of livestock population is found in
a) Denmark
b) India
c) China
d) Both (b) and (c)
322. Which of the following is the pair of biofertilizers?
a) Azolla and BGA
b) Nostoc and legume
c) Rhizobium and grasses
d) Salmonella and E.coli
323. Haploid plantlets can be produced by
a) Pollen culture
b) Cotyledon culture
c) Embryo culture
d) Meristem culture
324. An exotic breed of cow is:
a) Ongole
b) Friesian
c) Halliker
d) Deoni
325. Surrogate mother is:
a) Mother without lactation
b) Future mother with embryo implanted from another
c) Carrying several embryos at one time
d) Artificially inseminated female
326. Bactrian camel is characterised by:
a) Two humps and long neck
b) Two humps and long limbs
c) Two humps and thick coat
d) Single hump and thick coat
327. Inland fisheries is referred to:
a) Culturing fish in freshwater
b) Trapping and capturing fishes from sea coast

- c) Deep sea fishing
 328. Rearing of honey bees is practiced for obtaining
 a) Honey b) Wax c) Honey and wax d) None of these
329. Sugars extracted from sugarcane and sugar beet differ in:
 a) Taste
 b) Colour
 c) C¹³/C¹² ratio
 d) The one extracted from sugarcane is sucrose is while from sugarbeet is fructose
330. Some common marine fishes are
 a) Hilsa b) Mackerel c) Pomfrets d) All of these
331. Breeding of crops with higher levels of vitamins and minerals or higher protein and healthier fats is called
 a) Plant breeding b) Biofortification c) Both (a) and (b) d) Crop protection
332. Castor oil is obtained from:
 a) *Brassica campestris* b) *Ricinus communis*
 c) *Helianthus annuus* d) *Arachis hypogea*
333. Cellular totipotency is demonstrated by
 a) All eukaryotic cells b) Only bacterial cells
 c) Only gymnosperm cells d) All plant cells
334. In honey, the percentage of maltose and other sugars is
 a) 9.2 b) 8.81 c) 10.5 d) 11.2
335. Which of the following is a correct match between crop, variety and resistance to diseases?
- | Crops | Variety | Resistance to diseases |
|-------------|----------------|------------------------|
| a) Wheat | Himgiri | White rust |
| b) Brassica | Pusa sadabahat | Black rot |
| c) Cowpea | Pusa komal | Bacterial blight |
| d) Chilli | Pusa swarnim | Chilly mosaic virus |
336. Which one is correct about Atlas 66?
 a) It has high protein content b) It has been used as a donor for improving cultivated wheat
 c) both (a) and (b) d) None of the above
337. Which one of the following mollusca groups is primarily used in the pearl formation?
 a) Monoplacophorans b) Cephalopods c) Gastropods d) Pelecypods
338. Semi-dwarf rice varieties were introduced in India
 a) 1966 b) 1965 c) 1967 d) 1969
339. Cultivation of fishes in artificially prepared ponds
 a) Aquaculture b) Pisciculture c) Vermiculture d) Agriculture
340. Which of the following is the sequence of cultivation of fish?
 a) Fry—fingerlings—spawn—Adult b) Spawn—fry—fingerlings—adult
 c) Adult—spawn—fingerlings—fry d) Fingerlings—fry—spawn—adult
341. The composition of cotton fibre is:
 a) Cellulose b) Callose c) Chitin d) Pectin
342. *Triticum aestivum* is:
 a) Diploid b) Triploid c) Haploid d) Hexaploid
343. Main product of poultry is:
 a) Eggs b) Chicken c) Meat d) Eggs and meat
344. Elephants are sought after for:
 a) Skin b) Hair c) Meat d) Ivory
345. Maximum contribution to the total milk production of our country comes from:
 a) Cows b) Buffaloes c) Camels d) Goat
346. The practices concerned with the improvement in animals husbandry include

- a) Management of farm and farm animals b) Animals breeding
 c) Both (a) and (b) d) None of the above
347. Exotic breeds:
 a) Require specific environment b) Hardy and high yielding
 c) Are sturdy d) Take less food
348. Hatching net is called:
 a) Nursery kind b) Production pond c) Stocking pond d) Hapa
349. Which of the following has been recently used for increasing productivity of super milk cows:
 a) Artificial insemination by a pedigree bull only
 b) Superovulation of a high production cow only
 c) Embryo transplantation only
 d) A combination of superovulation, artificial insemination and embryo transplantation into a carrier cow (surrogate mother)
350. Several South Indian states raise 2-3 crops of rice annually. The agronomic feature that makes this possible is
 a) Shorter rice plant
 b) Better irrigation facilities
 c) Early yielding rice variety
 d) Disease resistant rice variety
351. Crosses involving plants of the same variety are:
 a) Intravarietal b) Interspecific c) Intervarietal d) Intrageneric
352. Animal breeding is producing improved breeds of ...A... by improving their ...B... through selective mating. Here A and B refers to
 a) A-domesticated animals, B-phenotype
 b) A-wild animals, B-genotype
 c) A-domesticated animals, B-genotype
 d) A-wild animals, B-phenotype
353. 250 g of *Methylophilus methylotrophus* bacterium has been used to produce
 a) 15 tonnes of proteins b) 25 tonnes of proteins
 c) 35 tonnes of proteins d) 50 tonnes of proteins
354. Aquaculture includes:
 a) Freshwater fishing b) Brackish water fishes c) Marine fishery d) All of the above
355. The amount of protein per 100 g (without water, approximately 2 eggs) is:
 a) 11.9 b) 20.1 c) 16 d) 45
356. Parthenogenesis is commonly found in:
 a) Ants, bees and wasps b) Ascaris, earthworm and liver fluke
 c) Frogs, fishes and foxes d) Star fish, Jelly fish and cuttle fish
357. Green revolution depended mainly on plant breeding techniques for high yielding and disease resistant varieties of
 a) Wheat b) Rice c) Maize d) All of these
358. Crustacean fishery is connected with exploitation of
 a) Oysters and crabs b) Mussels and squids c) Shell and cuttle fish d) Lobster and prawn
359. The art and science of combining ideas, facilities, process, materials and labour to produce and market a worth, while produce or service successfully called
 a) Marketing b) Improvements c) Management d) None of these
360. The domesticated birds used for food or for their eggs are called
 a) Poultry b) Egg farming c) Apiculture d) Dairy farming
361. In poultry birds, nasal and eye discharge with foul smell, acute respiratory problem and inflamed and swollen eyes are the symptoms of
 a) Chronic respiratory disease b) Infectious coryza disease

- 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
383. High content of lysine is present in
 a) Wheat b) Apple c) Maize d) Banana
384. The process of breeding by artificially inducing mutations using chemical or radiation is called
 a) Artificial breeding b) Chemical breeding c) Synthetic breeding d) Mutation breeding
385. Infertility of local breeds of cattle can be overcome by use of:
 a) Cross breeding with exotic breeds b) Good nourishment
 c) Stilbesterol d) Gonadotropin
386. What will you conclude, when a cow is crossed to a bull and female progeny is yielding more milk than its mother?
 a) More number of genes for high yielding milk are inherited, only from the female parent
 b) More number of genes for high yielding milk are inherited only, from the male parent
 c) More number of genes for high yielding milk are inherited only from both the parent
 d) The progeny through mutation achieved more number of genes for high yielding milk
387. Semi-dwarf wheat was developed at
 a) International Centre for Wheat and Maize Improvement Brazil
 b) International Centre for Wheat and Maize Improvement Mexico
 c) International Centre for Wheat and Rice Improvement Japan
 d) International Centre for Wheat and Gram Improvement Mexico
388. Pisciculture has bright future in India due to:
 a) Considerable demand b) Good response of native fishes to culture
 c) Abundance of cultivable waters d) All of these
389. Resistance to yellow mosaic virus in bhindi was transferred from a wild species and resulted in new variety of *A. esculentus* called
 a) Golden kranti b) Sonalika c) IR-8 d) Parbhani
390. 'Himgiri' developed by hybridisation and selection for disease resistance against rust pathogens is a variety of:
 a) Chilli b) Maize c) Sugarcane d) Wheat
391. Pearl producing Indian species is:
 a) *Pinctada indica* b) *Ostrea indica* c) *Pinctada vulgaris* d) *Ostrea vulgaris*
392. Which one of the following is a viral disease of the poultry?
 a) Coryza b) New castle disease c) Pasteurellosis d) Salmonellosis
393. At the time of herd improvement by MOET generally ...A... ovum is released from each ...B... at the time of ...C.... But by ...D... injection ...E... ova can be produced from the ovary. After artificial insemination ...F... embryo are collected at a time. Then each embryo is transplanted into a ...G... A to G in the above paragraph refers
 a) A-one, B-testis, C-spermatogenesis, D-hormone, E-more, F-one, G-mother
 b) A-one, B-ovary, C-ovulation, D-hormone, E-more, F-4 to 10, G-surrogate mother
 c) A-one, B-ovary, C-ovulation, D-enzyme, E-more, F-4 to 10, G-mother
 d) A-one, B-ovary, C-ovulation, D-chemical, E-more, F-one, G-mother
394. MOET is method of:
 a) Fish cultivation b) Cloning in sheep
 c) Hybridization in cattle d) Birth control in humans
395. SCP is rich in high quality ...A... and is poor in ...B.... Here A and B refers to
 a) A-protein; B-minerals b) A-protein; B-fats c) A-fats; B-protein d) A-lipid; B-protein
396. The term Plantain refers to:
 a) Unripe banana b) Fully ripe banana c) Banana pudding d) None of the above

397. The Indian tiger prawn is:
 a) *Penaeus indicus* b) *Penaeus monodon* c) *Macrobrachium* d) *Palaemon*
398. Lac is produced as:
 a) Faeces of lac body b) Secretion from body
 c) Excretion from body d) Excess from oozing out of body
399. Which of the following is incorrect w. r. t SCP?
 a) Quantitative and qualitatively superior proteins
 b) Production involves utilization of organisms which has high rate of biomass production and growth
 c) 250 g *Methylophilus methylotrophus* can produce 20 tonnes of protein per day
 d) Can be obtained from both unicellular and multicellular organisms
400. *Pennisetum* and *Sorghum* are of African origin, while rice originated in:
 a) China b) India c) America d) Africa
401. Examples of crustaceans are
 a) Prawns b) Crabs c) Both (a) and (b) d) None of these
402. *Saccharum barberi* and *Saccharum officinarum* are varieties of
 a) Sugar cane b) Maize c) Wheat d) Rice
403. Classical plant breeding involves
 I. crossing hybridization of purelines
 II. artificial selection to produce plants with desirable characters of high yield
 III. nutrition
 IV. resistance to disease
 Choose the correct option
 a) I, II and III b) I, III, and IV c) II, III and IV d) I, II, III and IV
404. Sugar is extracted besides sugarcane from:
 a) Potato b) Sweet-potato c) Beet d) Colocasia
405. The drug which reduces blood pressure is obtained from:
 a) *Solanum nigrum* b) Aconitum
 c) *Centella asiatica* d) *Rauwolfia serpentina*
406. Huskies are:
 a) Yaks b) Donkeys c) Thick coated dogs d) Water buffaloes
407. In mung bean, resistance to yellow mosaic virus and powdery mildew were introduced by
 a) Hybrid vigour b) Plant breeding c) Hetrosis d) Mutation
408. Shagreen is obtained from:
 a) Dried skin of shark b) Skin of codfish c) Air bladder of fishes d) None of the above
409. Which of the following is correctly matched?
 a) Apiculture – Honey bee b) Pisciculture – Silk moth
 c) Sericulture – Fish d) Aquaculture – Mosquitose
410. Milk yield is primarily dependent on the
 a) Quality of breeds b) Quality of milk c) Both (a) and (b) d) None of these
411. Before the European invader which vegetable was absent in India?
 a) Potato and Tomato b) Simla mirch and Brinjal
 c) Maize and chichinda d) Bitter gourd
412. Which one of the following types of silk is being produced extensively in South India?
 a) Eri b) Mulberry c) Tussar d) Muga
413. Which is the most important source of food and fodder?
 a) Algae b) Fungi c) Cereals d) Gymnosperms
414. The scientific name of Bajra is:
 a) *Sorghum vulgare* b) *Corchorus capsularis*
 c) *Gossypium herbaceum* d) *Pennisetum typhoides*
415. Macaroni is obtained from:

- a) *Oryza sativa*
- b) *Sorghum vulgare*
- c) *Triticum durum*
- d) *Ricinus communis*

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

- a) Dairying
- b) Poultry
- c) Cattle farming
- d) Livestock improvement

417. To isolate protoplast, one needs

- a) Pectinase
- b) Cellulase
- c) Both (a) and (b)
- d) Chitinase

418. The green alga rich in protein used as food supplements even by space travellers is

- a) *Chlamydomonas*
- b) *Volvox*
- c) *Spirogyra*
- d) *Spirulina*

419. Consider the following statements which of them are the advantages of tissue culture/micropropagation

- I. a large number of plants can be grown in short time
 - II. disease free plants can be developed from diseased plants
 - III. seedless plants can be multiplied
 - IV. somatic hybrids can be raised by tissue culture, where sexual hybridization not possible
- Choose the correct option

- a) I, II and III
- b) II, III and IV
- c) I, II and IV
- d) I, II, III and IV

420. Which of the following countries has minimum average annual milk yield per cow?

- a) India
- b) Pakistan
- c) Netherlands
- d) England

421. Which of the following pair belongs to crustacean fishery?

- a) Oysters and crabs
- b) Mussels and squids
- c) Shells and cuttle fish
- d) Lobster and prawn

422. Consider the following statements

- I. The progeny of cross-breeding may be used for commercial production
- II. In case of artificial insemination, the semen can be used immediately or can be frozen for later use
- III. Controlled breeding experiments are carried out using artificial insemination and multiple ovulation embryo transfer technology

Which of the statements given above are correct?

- a) I and II
- b) I and III
- c) II and III
- d) I, II and III

423. Pulses belong to the family:

- a) Leguminosae
- b) Gramineae
- c) Cruciferae
- d) Compositae

424. The green revolution in India was possible due to:

- a) Exploitation of high yielding varieties
- b) Intensive cultivation
- c) Better irrigation, fertilizer, pesticides etc. facilities
- d) All the above

425. The fishery does not include the rearing, catching and processing of

- a) Crabs and corals
- b) Squids and lobsters
- c) Aquatic plants and animals
- d) All of the above

426. Bird flu is caused by

- a) Fungus
- b) Bacteria
- c) Protozoa
- d) Virus

427. The host crop plants may be resistant to insects pests due to the

- I. morphological characteristics
- II. biochemical characteristics
- III. physiological characteristics

Choose the correct option

- a) I and II
- b) II and III
- c) I and III
- d) I, II and III

428. Rice, maize, sorghum and millets are the principal cereals of the:

- a) Temperate region
- b) Tropics
- c) North pole
- d) Cold regions

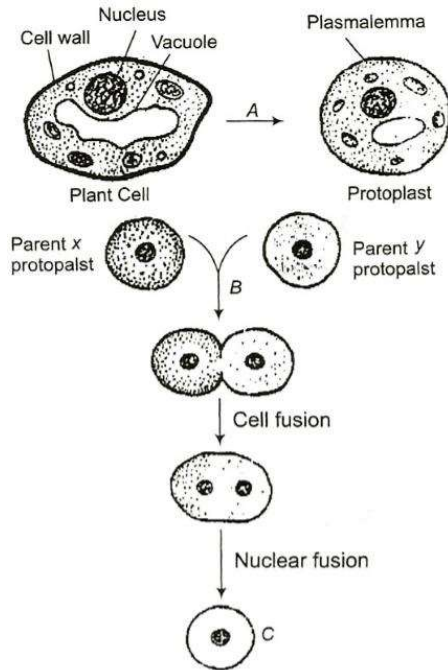
429. When breeding is between the unrelated animals, including individuals of the same breed but having no common ancestors for 4-6 generations or between different breeds or different species, it is called

- a) Outbreeding
- b) Inbreeding

c) inbreeding depression

d) Hybridization

430. The following diagram refers to protoplast fusion



Here A, B and C refers to

- a) A-Cellulase and bactinase, B-Polyethylene glycol, C-Somatic hybrid cell
- b) A-Pectinase, B-Cellulase, C-Zygotic cell
- c) A-Proteinase, B-Polyethylene glycol, C-Somatic hybrid cell
- d) A-Cellulase, pectinase, B-Proteinase, C-Germ cell

431. Which of the following crop plants is not matching as correct pair with its variety

- I. Chili – Pusa Sadabahar
- II. Flat bean – Pusa stem-2
- III. Rape seed – Pusa Gaurav
- IV. Cauliflower – Pusa Shubhra
- V. Cow pea – Pusa Komal
- VI. Wheat – Pusa A-4

Choose the correct option

- a) V
- b) VI
- c) IV
- d) I

432. Part of the plant, which is cultured to obtain virus free clones is

- a) Leaf
- b) Root tip
- c) Short tip
- d) Embryo

433. Which one of the following is a viral disease of poultry?

- a) Bird flu
- b) Swine flu
- c) Fowl cholera
- d) Spirochaetosis

434. Given below are a few statements regarding somatic hybridisation

- I. Protoplasts of different cells of the same plant can be fused
- II. Protoplasts from cells of different species can be fused
- III. Treatment of cells with cellulose and pectinase is mandatory
- IV. The hybrid protoplast contains characters of only one parental protoplast

Choose the correct option

- a) I and II
- b) I and I
- c) II and III
- d) III and IV

435. Semi-dwarf wheat was developed by

- a) Norman E Borlaug
- b) MS Swaminathan
- c) WY Cheung
- d) Fontana

436. Single cell protein reduces

- a) Environment pollution
- b) Greenhouse effect
- c) Global warming
- d) Production and growth of crop

437. The process which results in the identification of superior males and superior females of the same breed
 a) Inbreeding b) Outbreeding c) Outcrossing d) None of these
438. The species which yield commercial cotton belongs to the genus:
 a) *Hibiscus* b) *Abutilon* c) *Sida* d) *Gossypium*
439. ...A... and ...B... were crossed to obtained sugarcane varieties having desirable qualities and ability to grant in the sugarcane areas of North India. The most appropriate option for A and B is
 a) *A-Saccharum procerum*; *B-Saccharum robustum*
 b) *A-Saccharum barberi*; *B-Saccharum robustum*
 c) *A-Saccharum spontanum*; *B-Saccharum barberi*
 d) *A-Saccharum barberi*; *B-Saccharum officinarum*
440. Some common fresh water fishes are
 a) Catla b) Rohu c) Common carp d) All of these
441. Taichung native-the dwarf rice variety in India is a native of:
 a) Japan b) Philippines c) Taiwan d) Mexico
442. Silk, honey and lac are:
 a) Secretory substances of insects b) Secretory substances of plants
 c) Artificial chemicals d) All of the above
443. Which of the following is insect pest resistance?
 a) Pusa Gaurav b) Pusa Sem-2 c) Pusa Sem-3 d) All the above
444. Molluscs are also called as
 a) Ray fish b) Golden fish c) Electric fish d) Shell fish
445. To meet the demands of the society, *in vitro* production of a large number of plantlets in a short duration is practiced in floriculture and horticulture industry today. It is called
 a) Somatic hybridization b) Micropropagation
 c) Hybridoma technology d) Somaclonal variation
446. Rearing of honey bees for obtaining honey and bee wax is called
 a) Pisciculture b) Sericulture c) Apiculture d) Aquaculture
447. The word poultry is used for
 a) Wild birds b) Domestic bird c) Both (a) and (b) d) All of these
448. Who gave the idea that every plant cell is totipotent?
 a) PR White b) EC Cocking c) FC Steward d) G Haberlandt
449. Lac is a:
 a) Plant product b) Mineral product c) Synthetic product d) Animal product
450. Edible aquatic animals are
 a) Crab b) Lobster c) Oyster d) All of these
451. Which of the following is not a root vegetable?
 a) *Solanum tuberosum* b) *Ipomoea batatas*
 c) *Beta vulgaris* d) *Raphanus sativus*
452. Ranikhet or New Castle Disease of poultry is caused by:
 a) Bacteria b) Virus c) Fungus d) None of these
453. In dairy management, the people deals with processes and systems that
 a) Increase yield of milk b) Improve quality of milk
 c) Both (a) and (b) d) Marketing of milk
454. Ship of desert is:
 a) Elephant b) Camel c) Sheep d) Goat
455. Exotic breeds are:
 a) Used for cross breeding b) Allowed to multiply and replace local breeds
 c) Easy to manage d) Resistant to local pests and pathogens
456. When breeding is between animals of the same breed for 4-6 generation, it is called
 a) Crossbreeding b) Outbreeding c) Outcrossing d) Inbreeding

457. Paddy is suitable for cultivation in:
a) Red soils b) Dry soils c) Irrigated soils d) Black soils
458. Father of white revolution in India is
a) Verghese Kurein b) Dr MS Swaminathan c) Alexzander Flemming d) William Harvey
459. Dharwar American variety of cotton is the product of
a) Mass selection b) Mutual breeding
c) Clonal selection d) Parasexual hybridization
460. The scientific name of Jowar is:
a) *Sorghum vulgare* b) *Corchorus capsularis*
c) *Gossypium herbaceum* d) *Pennisetum typhoides*
461. The commercial jute fibers are:
a) Xylem fibres b) Cortical fibres c) Phloem fibres d) Interxylary fibres
462. Haploid plants are preferred over diploid plants for study of mutation because in haploids:
a) Culturing is easy b) Only dominant mutation expresses
c) Only recessive mutation expresses d) All mutations express
463. Which of the statements is correct?
I. The maintenance of hives for the production of honey bees for the is called apiculture
II. A group of animals related by descent and similar in most characters are called a breed
III. The agriculture practice of breeding and raising livestock is called animal husbandry
Choose the correct option
a) I, II and III b) I and II c) I and III d) II and III

