**MASTERS PRE-UNIVERSITY COLLEGE, HASSAN 573201**

**BIOLOGY PRACTICE QUESTIONS**

**Topic: STRATIGIES FOR ENHANCEMENT IN FOOD PRODUCTION**

1. **Breeding of crops for improved nutritional quality is referred as**

a. Biomagnification b. biomining c. Biofortification d. Bioremediation

1. **Which statement about breeding is wrong**

a. By inbreeding pure lines cannot be obtained

b. Cross breeding allows desirable qualities of two different breeds to be combined

c. Inbreeding exposes harmful recessive genes that are eliminated by selection

d single outcross often help to overcome inbreeding depression.

1. **Continued inbreeding can cause inbreeding depression. Whenever, this becomes a problem, selected animal of the breeding population should be mated with:**
2. Related superior animals of same breed
3. Related superior animals of different breed
4. Unrelated superior animals of same breed
5. Unrelated superior animals of same breed
6. **Apiculture is associated with groups of plants…**
7. Grapes, Maize, potato b. Sugarcane, Paddy, Banana

c. Guava, sunflower, Strawberry d. pineapple, sugarcane, Strawberry

1. **Match the following:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Column I** | | **Column II** | |
| A | Totipotency | p | Breeding crops with higher levels of nutrients. |
| B | Micropropagation | q | Plants grown from hybrid protoplast |
| C | Somaclones | r | Producing large number of plants through tissue culture |
| D | Somatic hybrid | s | Capacity to generate a whole plat from an explants |
| E | Biofortification | t | Plants genetically identical to the original plant |

a. A-s, B-r, C-t, D-q, E-p b. A-p, B-q, C-r, D-s, E-t

c. A-p, B-q, C-s, D-r, E-t d. A-r, B-s, C-t, D-q, E-p

1. **Match the following:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Column I** | | **Column II** | |
| A | Hairy leaves | P | Stem saw fly |
| B | Solid stem in wheat | Q | Boll worms |
| C | Nectar less cotton | R | Stem borers |
| D | High aspartic and low nitrogen | S | Jassids and cereal leaf beetle |

a. A-s, B-p, C-q, D-r b. A-p, B-q, C-r, D-s

c. A-s, B-p, C-r, D-q d. A-p, B-s, C-r, D-q

1. **In cloning of cattle a fertilized egg is taken out of the mother’s womb and**

a.In the eight cell stage, cells are separated and cultured until small embryos are formed which are implanted into the womb of other cows.

b. In the eight cell stage the individual cells are separated under electrical field for further development in culture media

c. From this upto eight identical twins can be produced

d. the egg is divided into pairs of cells which are implanted into the womb of other cows

1. **Hisaradale have been developed by**

a)Out-crossing b)Inter specific hybridisation

c)Cross breeding d)Intra specific hybrdisation.

1. **Which of the following is source of single cell protein?**

a) *Bacillus thuringiensis* b)Azosprillum

c) Saccharomyces d)*Methylophilus methylotrophus*

1. **Prabhani kranti, a variety of bhindi is resistant to**

a)Bacterial blight b)Yellow mosaic virus c)Black rot d)Leaf curl

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

**a) Selection and testing of superior recombinants**

**b) Germplasm collection**

**c) Cross hybridisation among the selected parents**

**d) Evalutation and selection of parents**

**e) Testing release and commerciaslisation of new cultivars.**

a) b,d,c,a and e b) a,b,d,c and e c) c,d,a,b and e d) b,c,a,d and c.

1. **Biofortified rice are enriched in which of the following nutrient?**

a)Calcium b)Iron c)Protein d)All of the above.

1. **Match the columns I and II, and choose the correct combination from the options given.**

|  |  |
| --- | --- |
| ***Column I*** | ***Column II*** |
| 1. **Bhindi** | **1.Pusa Snowball K-I** |
| 1. **Cowpea** | **2.Pusa A-4** |
| 1. **Rapseed mustard** | **3.Pusa komal** |
| 1. **Cauliflower** | **4.Pusa Gaurav** |

1. a-2,b-3,c-1,d-4 b) a-3,b-2,c-4,d-1 c) a-1,b-4,c-3,d-2 d) a-2,b-3,c-4,d-1
2. **In tissue culture, callus can be induced to form shoot or root by altering the rate of**
3. Auxin to cytokinin b. Gibberellin to cytokinin

c. Auxin to gibberellin d. cytokinin to ethylene

1. **Which is incorrectly matched?**
2. Explant-excised plant part used for callus formation
3. Cytokinins-root initiation in callus
4. Somatic embryo-embryo produced from a vegetative cell
5. Anther culture –haploid plants
6. **Exotic breed of cattle is..**
7. Friesian b. Holstein c. Jersey d. All of the above
8. **Pollen grains of plant 2n =28 are cultured to get callus by tissue culture. What would be the number of chromosomes in the cells of callus…**
9. 14 b. 21 c. 28 d. 56
10. **Match the columns I and II, and choose the correct combination from the options given.**

|  |  |
| --- | --- |
| ***Crop variety*** | ***Resistant to*** |
| 1. **Himgiri** | **i.white rust** |
| 1. **Pusa Swarnim** | **ii.Hill bunt** |
| 1. **Pusa shubhra** | **iii.Leaf curl** |
| 1. **Pusa Sadabahar** | **iv.Black rot** |

1. a-ii,b-i,c-iv,d-iii b) a-i,b-ii,c-iii,d-iv c) a-ii,b-i,c-iii,d-iv d) a-i,b-ii,c-iv,d-iii.
2. **Pure line breeds refer to**
3. Heterozygosity b. Homozygosity only

c. Homozygosity and independent assortment d. Heterozygosity and linkage

1. **Mule is a product of**

a. Inbreeding b. Out breeding c. Interspecific hybridization d. Cross breeding

1. **Amritmahal is a/an**

a. Dual purpose breed b. Exotic breed c. Cross breed d. Draught breed

1. **During somatic hybridization in plants**

a. Somaclones are produced in large numbers

b. Apical meristems are cultured to get virus free plants

c. Cell walls and middle lamella are digested before fusing cells

d. Crop plants with higher levels of vitamins, proteins and minerals are hybridized.

1. **Choose the incorrect statement regarding artificial insemination for carrying out controlled breeding in animals:**

a. Semen should be used immediately and cannot be stored for further use.

b. Fewer sperms are required to conceive conception through this technique

c. It can control spread of some diseases

d. It is very economical method.

1. **Agriculture of India accounts for ------GDP and employs nearly -------of population.**

a. 62%, 33% b. 33%, 62% c. 67%, 33% d. 32%, 67%

1. **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 sugarcane

1. **Which of the following is a disease resistant, high yielding breed of poultry developed in Karnataka?**

a. Aseel b. Giriraja c. White leghorn d. Plymouth Rock

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

a. IAA and gibberellins

b. Sodium chloride and potassium chloride

c. Polyethylene glycol and sodium nitrate

d. IAA and kinetin

1. **Tropical cane sugar grown in south India is**
2. *Saccharum barberi* with high sugar yield
3. *Saccharum barberi* with thinner stem and poor sugar content
4. *Saccharum officinarum* with thicker stem and high sugar content
5. *Saccharum officinarum* with poor sugar content yield
6. **Apart from high yield, other main objective of plant breeding is**

a) Improvement of quality b) Development of resistance

c) Establishment of change in duration d) All the above

1. **Cattle feed should contain**

**a.** Roughage b. Concentrate c. Both of these d. None of these

1. **Select the viral disease of cattle:**
2. Foot and mouth disease b. Anthrax c. Aspergillosis d. Tuberculosis
3. **When two unrelated individuals or lines are crossed, the performance of F1 hybrid is often superior to both its parents. This phenomenon is called**
4. Transformation b. Crossbreed c. Heterosis d. Interspecific hybrid
5. **Transgenic plants are**
6. Produced by a somatic embryo in artificial medium
7. Generated by introducing foreign DNA in to a cell and by regenerating a plant from that cell
8. Produced after protoplast fusion in artificial medium
9. Grown in artificial medium after hybridization in the field
10. **In order to obtain virus-free plants through tissue culture the best method is:**
11. Protoplast culture b. Embryo culture c. anther culture d. meristem culture
12. **A man made allopolyploid cereal crop is**

a) *Hordeum vulgare* b) *Raphano brassica*

c) *Triticale* d) *Zea mays*

1. **Match the items in Column I with those in Column II.**

**Column I Column II**

A. Somaclones 1. Spirulina

B. Atlas 66 of wheat 2. Resistance to yellow mosaic in mung bean

C. Mutation breeding 3. Lysine and tryptophan-rich

D. Single cell protein 4. High protein content

E. Maize hybrids 5. Micro-propagation

1. A – 5, B – 4, C – 2, D – 1, E – 3 b. A – 1, B – 2, C – 3, D – 4, E – 5

c. A – 5, B – 4, C – 1, D – 2, E – 3 d. A – 4, B – 3, C – 2, D – 1, E – 5

1. **Hidden hunger refers to deficiencies of**
2. Carbohydrates, fats and vitamins
3. Proteins, fats and vitamins
4. Carbohydrates, Vitamins and minerals
5. Proteins, Vitamins and minerals
6. **Pomato is a new hybrid developed by**
7. Crossbreeding
8. Somatic hybridization
9. Interspecific hybridization
10. Micropropagation
11. **A Hybrid where the cytoplasm of two parent cells is fused by retaining only on parent nucleus is called…**

a. An interbreed b. Symmetric somatic hybrid

c. Asymmetric somatic hybrid d. Cybrid

1. **The biggest constraint of plant breeding is:**

a. availability of desirable gene in the crop and its wild relatives b. infrastructure

c. trained manpower d. transfer of genes from unrelated sources.