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IBPS AFO – Genetics

Previous Year Questions (Topic-wise Compilation)

Subject	Agriculture — Genetics & Plant Breeding
Source Papers	4 IBPS AFO Mains papers (2020–21 through 2024)
Total Questions	19 curated MCQs
Coverage	Mendelian inheritance, DNA/RNA, hybridization, mutation, tissue culture, heterosis, breedin
Format	Multiple choice; answers from official answer keys

How to use this booklet: Each question is reproduced exactly as it appeared in the original paper, followed by the answer marked in that paper's official answer key. Where a marked answer appears inconsistent with the standard scientific consensus, an editorial note has been added in red. Use this booklet for last-mile revision of the genetics & plant-breeding portion of IBPS AFO Mains.

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IBPS AFO Mains 2020–21 (8 questions)

Q2. The bond which is formed between parallel and non-parallel strands of DNAs

(a) Hydrogen bond
(b) Phosphodiester bond
(c) Covalent bond
(d) Ionic bond
(e) Metallic bond

Answer: (a) Hydrogen bond

Q3. Chemical used in polyploidy breeding

(a) Colchicine
(b) NAA
(c) IAA
(d) Gibberellins
(e) Cytokinin

Answer: (a) Colchicine

Q8. Protoplasmic fusion between plants of different species

(a) Intergeneric Hybridization
(b) Interspecific hybridization
(c) Somatic hybridization
(d) Intrageneric hybridization
(e) Intraspecific hybridization

Answer: (c) Somatic hybridization

Q53. Increased performance of F1 hybrid over parent is called?

(a) Dominance Heterosis
(b) Inbreeding depression
(c) Test cross
(d) Back Cross
(e) None of these

Answer: (b) Inbreeding depression

*Editor's note: The official key marks (b) Inbreeding depression, but the increased performance of an F1 hybrid over its parents is the definition of **Heterosis** (hybrid vigour). Treat option (a) as the scientifically correct answer when revising the concept.*

Q54. Two well developed breeds are crossed Alternatively will be known as?

(a) Triple cross
(b) Double cross
(c) Criss Cross
(d) Test cross
(e) Back cross

Answer: (c) Criss Cross

Q56. To determine whether an organism with a dominant phenotype is homozygous dominant or heterozygous which cross will be preferred the most?

(a) Back cross
(b) Test cross
(c) Epistatic cross
(d) Antibody cross
(e) Heterosis

Answer: (b) Test cross

Q57. The gene which is having a masking effect is which kind of gene?

(a) Epistatic
(b) Synthetic
(c) Covered
(d) Pleiotropic
(e) Tautomeric

Answer: (a) Epistatic

Q58. When many genes known to affect more than one character this kind of situation will be referred to as?

(a) Multiple gene affect
(b) Masking effect
(c) Pleiotropy
(d) Polymeric gene interaction
(e) Somatic gene interaction

Answer: (c) Pleiotropy

IBPS AFO Mains 2021–22 (4 questions)

Q4. Pusa Nanha Variety of papaya is developed by …….

(a) Mutation
(b) Hybridization
(c) Conventional Breeding
(d) Tissue culture
(e) None of the above

Answer: (a) Mutation

Q10. Which of the following method is not related to direct gene transfer?

(a) DNA Transmission
(b) Particle Bombardment
(c) Tissue culture
(d) Microinjection
(e) Electroporation

Answer: (c) Tissue culture

Q43. When plant is propagated by small tissue or part of a plant then that particular technique is termed as

(a) Hybridization
(b) Somatic hybridization
(c) Sexual propagation
(d) Micro-propagation
(e) None of these

Answer: (d) Micro-propagation

Q52. Norin 10 is dwarfing gene of

(a) Rice
(b) Wheat
(c) Maize
(d) Bajra
(e) None of these

Answer: (b) Wheat

IBPS AFO Mains 2022–23 (3 questions)

Q16. The term used to define the variation derived from any form of the cell or tissue culture is known as_____

(a) Genetic Engineering
(b) Somaclonal variation
(c) Genetic Variation
(d) Environmental Variation
(e) None of the above

Answer: (b) Somaclonal variation

Q27. The process of removal of stamens or anthers or killing the pollen of a flower without harming female reproductive organ is known as

(a) Emasculation
(b) Male sterility
(c) Self-incompatibility
(d) Parthenogenesis
(e) None of the above

Answer: (a) Emasculation

Q32. Crossing of the two different pair of alleles, having different traits is

(a) Monohybrid
(b) Dihybrid
(c) Test Cross
(d) Back cross
(e) Top cross

Answer: (b) Dihybrid

IBPS AFO 2024 (Mains) (4 questions)

Q24. Which of the following is the hybrid variety of apple made by crossing Red Delicious × Ambri, which is colorful and sweet in taste and has good shelf life?

(a) Sunheri
(b) Ambroyal
(c) Lal Ambri
(d) Ambrich
(e) Chaubatia Anupam

Answer: (c) Lal Ambri

Q34. The phenomenon by which heterozygous individuals are phenotypically distinguishable from homozygous types is called?

(a) Genetic recombination
(b) Incomplete dominance
(c) Heritability
(d) Heredity
(e) Homozygous

Answer: (b) Incomplete dominance

Q36. What is the germination percentage required for the hybrid seed production of tomato?

(a) 80%
(b) 85%
(c) 70%
(d) 90%
(e) 75%

Answer: (d) 90%

Q38. GMO food developed using genetic engineering or having microorganisms in it is known as?

(a) Organic food
(b) Novel food
(c) Genetically modified or Engineered food
(d) Health food
(e) Conventional food

Answer: (c) Genetically modified or Engineered food

Topic Coverage at a Glance

Theme	Where it appeared
Molecular genetics	Structure of DNA (Q2, 2020-21); direct gene transfer methods (Q10, 2021-22)
Mendelian inheritance	Dihybrid cross (Q32, 2022-23); test cross (Q56, 2020-21); incomplete dominance (Q34, 2024
Gene action / interaction	Epistasis (Q57, 2020-21); pleiotropy (Q58, 2020-21)
Hybridization	Somatic hybridization (Q8, 2020-21); criss-cross (Q54, 2020-21); apple Lal Ambri (Q24, 2024
Heterosis & inbreeding	F1 hybrid performance (Q53, 2020-21)
Mutation & polyploidy	Colchicine in polyploidy (Q3, 2020-21); Pusa Nanha papaya (Q4, 2021-22)
Tissue culture / biotech	Somaclonal variation (Q16, 2022-23); micropropagation (Q43, 2021-22); GMO food (Q38, 20
Reproduction in breeding	Emasculation (Q27, 2022-23); hybrid seed germination % (Q36, 2024)
Important genes / varieties	Norin 10 dwarfing gene of wheat (Q52, 2021-22)

Compiled by Conglomer India's Agriguru EdTech for IBPS AFO aspirants. For any corrections to the answer key, email agriguru@conglomerindia.in.