

NEET PRINCIPLES OF INHERITANCE AND VARIATION — DIHYBRID CROSS AND LAW OF INDEPENDENT ASSORTMENT — PYQS**Max. Marks: 48****Questions: 12****Section A (MCQ) — 12 questions**

Q.1 Genes R and Y follow independent assortment. If RRY₂ produce round yellow seeds and rry₂ produce wrinkled green seeds, what will be the phenotypic ratio of the F₂ generation?

[NEET (UG) 2025]

- (1) Phenotypic ratio - 9:3:3:1
- (2) Phenotypic ratio - 9:7
- (3) Phenotypic ratio - 1:2:1
- (4) Phenotypic ratio - 3:1

Scan or tap for the full solution



Q.2 When a tall pea plant with round seeds was selfed, it produced the progeny of :

- (a) Tall plants with round seeds and
- (b) Tall plants with wrinkled seeds.

Identify the genotype of the parent plant.

[RE-NEET (UG) 2024]

- (1) TtRr
- (2) TtRR
- (3) TTRR
- (4) TTRr

Scan or tap for the full solution



Q.3 What is the expected percentage of F₂ progeny with yellow and inflated pod in dihybrid cross experiment involving pea plants with green coloured, inflated pod and yellow coloured constricted pod?

[NEET (UG) 2022 (Phase 2)]

- (1) 9%
- (2) 100%
- (3) 56.25%
- (4) 18.75%

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Q.4 A human male produces sperms with the genotypes AB, Ab, aB, and ab pertaining to two diallelic characters in equal proportions. What is the corresponding genotype of this person?

[AIPMT 2007]

- (1) AaBb
- (2) AABB
- (3) AaBB
- (4) AABb

Scan or tap for the full solution



Q.5 Test cross involves-

[AIPMT 2006]

- (1) Crossing between two F₁ hybrids
- (2) Crossing the F₁ hybrid with a double recessive genotype
- (3) Crossing between two genotypes with recessive trait
- (4) Crossing between two genotypes with dominant trait

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Q.6 In Mendel's experiments with garden pea, round seed shape (RR) was dominant over wrinkled seeds (rr), yellow cotyledon (YY) was dominant over green cotyledon (yy). What are the expected phenotypes in the F₂ generation of the cross RRY₂ × rry₂?

[AIPMT 2006]

- (1) Round seeds with yellow cotyledons, and wrinkled seeds with yellow cotyledons
- (2) Only wrinkled seeds with green cotyledons
- (3) Only wrinkled seeds with yellow cotyledons
- (4) Only round seeds with green cotyledons

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Q.7 How many different kinds of gametes will be produced by a plant having the genotype AABbCC?

[AIPMT 2006]

- (1) Two
- (2) Nine
- (3) Four
- (4) Three

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Q.8 In order to find out the different types of gametes produced by a pea plant having the genotype AaBb, it should be crossed to a plant with the genotype -

[AIPMT 2005]

- (1) aaBB
- (2) aabb
- (3) AaBb
- (4) AABB

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Q.9 In a plant, red fruit (R) is dominant over yellow fruit (r) and tallness (T) is dominant over shortness (t). If a plant with RRTt genotype is crossed with a plant that is rrtt

[AIPMT 2004]

- (1) 75% will be tall with red fruit
- (2) 25% will be tall with red fruit
- (3) 50% will be tall with red fruit
- (4) All the offspring will be tall with red fruit

Scan or tap for the
full solution



Q.10 Two non-allelic genes produce the new phenotype when present together but fail to do so independently then it is called [AIPMT 2001]

- (1) Polygene
- (2) Complementary gene
- (3) Non-complementary gene
- (4) Epistasis

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full solution



Q.11 Ratio of complementary genes is [AIPMT 2001]

- (1) 9 : 3 : 4 (2) 9 : 7
- (3) 12 : 3 : 1 (4) 9 : 3 : 3 : 4

Scan or tap for the
full solution



Q.12 Due to the cross between $TTRr \times ttrr$ the resultant progenies showed how many percent plants tall, red flowered: [AIPMT 2000]

- (1) 50% (2) 100% (3) 75% (4) 25%

Scan or tap for the
full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	1	4	4	1	2	1	1	2	3	2	2
Ques.	12										
Ans.	1										