

NEET PRINCIPLES OF INHERITANCE AND VARIATION — SEX DETERMINATION (HUMANS, BIRDS, HONEY BEE, GRASSHOPPER) — PYQS

Max. Marks: 52

Questions: 13

Section A (MCQ) — 13 questions

Q.1 Which of the following statements are true with reference to the sex-determination in honeybees?

- A. An offspring formed from the union of a sperm and an egg, develops as a female (queen or worker).
- B. An unfertilized egg develops as a male by parthenogenesis.
- C. A male has half the number of chromosomes than that of a female.
- D. Males produce sperms by meiosis.
- E. Honeybees have a haplodiploid sex-determination system.

Choose the correct answer from the options given below :

[NEET (UG) 2026]

- (1) A, B, C and E only
- (2) A, B, C and D only
- (3) B, C, D and E only
- (4) A, B, D and E only

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Q.2 In a population of a grasshopper species, the chromosome number of some members is 23 and some other members possess 24 chromosomes. The 23 and 24 chromosome-bearing members in this species are _____.

[NEET (UG) 2026]

- (1) females and males, respectively
- (2) males and females, respectively
- (3) all males
- (4) all females

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Q.3 XO type of sex determination can be found in :

[NEET (UG) 2022]

- (1) *Drosophila*
- (2) Birds
- (3) Grasshoppers
- (4) Monkeys

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Q.4 Select the **incorrect** statement. [NEET (UG) 2019]

- (1) In domesticated fowls, sex of progeny depends on the type of sperm rather than egg.
- (2) Human males have one of their sex-chromosome much shorter than the other.
- (3) Male fruit fly is heterogametic
- (4) In male grasshoppers, 50% of sperms have no sex-chromosome.

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Q.5 In our society women are blamed for producing female children. Choose the correct answer for the sex-determination in humans.

[NEET 2013 (Karnataka)]

- (1) Due to some defect like aspermia in man
- (2) Due to the genetic make up of the particular sperm which fertilizes the egg
- (3) Due to the genetic make up of the egg
- (4) Due to some defect in the women

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Q.6 Which one of the following conditions of the zygotic cell would lead to the birth of a normal human female child?

[AIPMT 2011 (Mains)]

- (1) only one Y chromosome
- (2) only one X chromosome
- (3) one X and one Y chromosome
- (4) two X chromosomes

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Q.7 Which one of the following conditions correctly describes the manner of determining the sex ?

[AIPMT 2011 (Prelims)]

- (1) XO condition in humans as found in Turner Syndrome, determines female sex
- (2) XO type of sex chromosomes determine male sex in grasshopper
- (3) Homozygous sex chromosomes (ZZ) determine female sex in Birds
- (4) Homozygous sex chromosomes (XX) produce male in *Drosophila*

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Q.8 Pattern baldness, moustaches and beard in human males are examples of: [AIPMT 2003]

- (1) Sex limited traits
- (2) Sex influenced traits
- (3) Sex determining traits
- (4) Sex linked traits

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Q.9 In *Drosophila*, the sex is determined by:

[AIPMT 2003]

- (1) X and Y chromosomes
- (2) Whether the egg is fertilized or develops parthenogenetically
- (3) The ratio of number of X-chromosomes to the sets of autosomes
- (4) The ratio of pairs of X-chromosomes to the pairs of autosomes

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Q.10 Number of Barr bodies in XXXX female is

[AIPMT 2001]

- (1) 3 (2) 1 (3) 2 (4) 4

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Q.11 Male XX and female XY sometime occur due to

[AIPMT 2001]

- (1) Aneuploidy
- (2) Deletion
- (3) Transfer of segments in X and Y chromosomes
- (4) Hormonal imbalance

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Q.12 Probability of four sons to a couple is :-

[AIPMT 2001]

- (1) $\frac{1}{16}$ (2) $\frac{1}{8}$ (3) $\frac{1}{4}$ (4) $\frac{1}{32}$

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Q.13 In *Drosophila* the XXY condition leads to femaleness whereas in human beings the same condition leads to Klinefelter's syndrome in male. It proves: [AIPMT 2000]

- (1) Y chromosome is active in sex determination in both human beings and *Drosophila*
- (2) In *Drosophila* Y-chromosome decides femaleness
- (3) Y chromosome of man have genes for syndrome
- (4) In human beings Y chromosome is active in sex determination

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ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	1	2	3	1	2	4	2	2	4	1	3
Ques.	12	13									
Ans.	1	4									