

MCQ TEST SERIES**S12-BZ-C4-PRINCIPLES OF INHERITANCE AND VARIATION****4.5 SEX LINKED INHERITANCE**

1. A trait is said to be sex-linked when:
 - A. It is determined by autosomal genes
 - B. It is expressed only in one sex
 - C. It is governed by genes located on the X or Y chromosome
 - D. It affects reproduction only
2. The inheritance of haemophilia in humans follows which pattern?
 - A. Autosomal dominant
 - B. Autosomal recessive
 - C. X-linked recessive
 - D. Y-linked dominant
3. Red-green colour blindness is caused by:
 - A. Dominant autosomal gene
 - B. Y-linked recessive gene
 - C. Recessive X-linked gene
 - D. Mutation on chromosome 21
4. If a colour-blind man marries a woman with normal vision (not a carrier), what will be the condition of their children?
 - A. All daughters colour blind
 - B. All sons colour blind
 - C. All daughters carriers
 - D. All children normal
5. Haemophilia is more common in males than in females because:
 - A. Females inherit two Y chromosomes
 - B. Males are heterogametic and express the gene when present
 - C. Males do not produce antibodies
 - D. Females suppress the gene expression
6. The pattern of inheritance where a trait skips a generation and reappears in the grandson from the maternal grandfather is called:
 - A. Incomplete dominance
 - B. Criss-cross inheritance
 - C. Parallel inheritance
 - D. Direct inheritance
7. In the condition $XcXc$, the female is:
 - A. A carrier of colour blindness
 - B. Affected by colour blindness
 - C. Normal
 - D. Immune to the disorder
8. A haemophilic mother and normal father will produce:
 - A. All normal children
 - B. All haemophilic daughters
 - C. All haemophilic sons and carrier daughters
 - D. All carrier children
9. The gene responsible for hypertrichosis (hairy pinna) is:
 - A. X-linked dominant
 - B. X-linked recessive
 - C. Autosomal
 - D. Y-linked (holandric)
10. Which statement is true about Y-linked inheritance?
 - A. It occurs equally in both sexes
 - B. It is transmitted only through females
 - C. It is passed directly from father to son
 - D. It can skip generations
11. A woman is a carrier for haemophilia. If she marries a normal man, what is the probability that a son will be haemophilic?

A. 0%	B. 25%
C. 50%	D. 100%
12. A man with normal vision marries a woman who is a carrier for colour blindness. What percentage of their daughters will be colour blind?

A. 0%	B. 25%
C. 50%	D. 100%
13. Which of the following is an example of a Y-linked trait in humans?
 - A. Colour blindness
 - B. Haemophilia
 - C. Baldness
 - D. Hair on pinna (hypertrichosis)
14. What will be the outcome if a colour-blind woman marries a normal man?
 - A. All children normal
 - B. All daughters normal, all sons colour blind
 - C. All sons and daughters colour blind
 - D. All daughters carriers, sons normal
15. What happens to sex-linked genes located in the non-homologous region of the X chromosome during meiosis?
 - A. They pair with Y chromosome
 - B. They are inactivated
 - C. They do not undergo crossing over
 - D. They switch chromosomes

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4.5 SEX LINKED INHERITANCE

ANSWER KEY

1. C
2. C
3. C
4. C
5. B
6. B
7. B
8. C
9. D
10. C
11. C
12. A
13. D
14. B
15. C

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