EDUSAMBAM ASSESSMENT SERIES

Biology Comprehensive Practice Test 5

PRINTABLE PRACTICE WORKSHEET

YOUR PHYSICAL & ONLINE SELF-ASSESSMENT ROADMAP

PHYSICAL

1. Download any practice test → 2. Solve within assigned time → 3. Submit it to your Teacher/Examiner → 4. Get assessed and improve

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Candidate Name:		**Roll No.:**	
Class / Grade:		**Date:**	
School / Institution:		**Test Centre:**	

Subject	Biology	**Topic**	Biology Comprehensive Practice Test 5	**Total Marks**	100
Total Questions	45	**Time Allowed**	1 Hour (60 minutes)	**Version**	A

GENERAL INSTRUCTIONS

1. Read each question carefully before answering.
2. For Section A and Section B, mark one answer only.
3. For Sections C and E, write your answer clearly in the space provided.
4. For Section D, write the correct letter from Column B against each item in Column A.
5. Do not use correction fluid. Keep all answers clear and legible.
6. This worksheet is prepared from the EDUSAMBAM practice assessment supplied for this paper.

PAPER PATTERN

Section	Questions	Marks Each	Total
Section A — Multiple Choice	15	2	30
Section B — True / False	10	2	20
Section C — Fill in the Blank	10	2	20
Section D — Column Matching	5 pairs	2	10
Section E — Short Answer	5	4	20
Total	**45**	**—**	**100**

Section A — Multiple Choice — 30 marks

1. The nucleus of a eukaryotic cell contains: — Basic · 2 pts

A. Chromosomal DNA
B. Only ATP
C. Only lipids
D. Cell wall material

Answer: ☐ A ☐ B ☐ C ☐ D

2. A chromosome is best described as: — Basic · 2 pts

A. DNA associated with proteins and organised into a structural unit
B. A type of carbohydrate
C. A membrane-bound organelle without DNA
D. A single protein

Answer: ☐ A ☐ B ☐ C ☐ D

3. A gene is best understood as: — Basic · 2 pts

A. A functional DNA sequence or region contributing to a biological product or regulatory function
B. An entire organism
C. A cell organelle
D. A lipid droplet

Answer: ☐ A ☐ B ☐ C ☐ D

4. DNA replication is described as semiconservative because: — Basic · 2 pts

A. Each daughter DNA molecule contains one parental strand and one newly synthesised strand
B. Both strands are entirely new
C. No parental DNA is retained
D. Only proteins are copied

Answer: ☐ A ☐ B ☐ C ☐ D

5. Meiosis is important in sexual reproduction because it: — Intermediate · 2 pts

A. Produces haploid cells and contributes to genetic variation
B. Produces identical diploid body cells only
C. Stops chromosome segregation
D. Eliminates all variation

Answer: ☐ A ☐ B ☐ C ☐ D

6. A mutation is: **Intermediate · 2 pts**

A. A change in genetic material sequence or structure
B. Always harmful
C. Always beneficial
D. Always caused by exercise

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

7. During gene expression, DNA information can be used to produce: **Intermediate · 2 pts**

A. RNA and, for protein-coding genes, proteins
B. Only lipids
C. Only carbohydrates
D. Only ATP

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

8. Crossing over during meiosis can: **Intermediate · 2 pts**

A. Exchange DNA between homologous chromosomes and increase variation
B. Double chromosome number in every gamete
C. Stop DNA replication permanently
D. Create a new organ

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

9. If two heterozygous parents have a recessive allele for a trait, a child can inherit: **Intermediate · 2 pts**

A. Two recessive alleles
B. Only dominant alleles
C. No alleles
D. Four chromosomes from each parent

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

10. A phenotype is influenced by: **Intermediate · 2 pts**

A. Genotype and environment, depending on the trait
B. Genes only in every case
C. Environment only in every case
D. Chromosome number only

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

11. A mutation in a non-coding regulatory region can matter because: **Intermediate · 2 pts**

A. It may alter when, where or how strongly a gene is expressed
B. Non-coding DNA can never have function
C. It automatically creates a new species
D. It always changes the amino-acid sequence

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

12. Genetic variation is important to evolution because: **Advanced · 2 pts**

A. It provides differences on which evolutionary processes can act
B. It prevents inheritance
C. It makes all individuals identical
D. It stops natural selection

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

13. A karyotype is useful for examining: **Advanced · 2 pts**

A. Chromosome number and large-scale chromosome structure
B. Only blood glucose
C. Only enzyme activity
D. Only species behaviour

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

14. If a cell fails to separate chromosomes correctly during meiosis, the gametes may: **Advanced · 2 pts**

A. Receive abnormal chromosome numbers
B. Become bacteria
C. Lose all DNA
D. Become identical to the parent

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

15. Which statement best integrates heredity? **Advanced · 2 pts**

A. DNA is organised into chromosomes; genes are expressed through regulated processes; meiosis and fertilisation transmit and reshuffle genetic information
B. Genes act independently of cells
C. Chromosomes are made only of RNA
D. Environment has no role in phenotype

Answer: ☐ **A** ☐ **B** ☐ **C** ☐ **D**

Section B — True / False **20 marks**

16. DNA contains information encoded in the sequence of its nucleotides. **Basic · 2 pts**

A. True ☐ **B.** False ☐

17. Every mutation causes a visible disease. **Basic · 2 pts**

A. True ☐ **B.** False ☐

18. Somatic cells and gametes normally have different chromosome-number states in organisms with sexual reproduction. **Basic · 2 pts**

A. True ☐ **B.** False ☐

19. Meiosis normally produces genetically identical daughter cells. **Basic · 2 pts**

A. True ☐ **B.** False ☐

20. Gene expression can be regulated. **Intermediate · 2 pts**

A. True ☐ **B.** False ☐

21. A dominant allele is always more common in a population than a recessive allele. **Intermediate · 2 pts**

A. True ☐ **B.** False ☐

22. Crossing over occurs between homologous chromosomes during meiosis. **Intermediate · 2 pts**

A. True ☐ **B.** False ☐

23. Mutations can be neutral, harmful or beneficial depending on context. **Intermediate · 2 pts**

A. True ☐ **B.** False ☐

24. A person's genotype and phenotype are always identical concepts. **Intermediate · 2 pts**

A. True ☐ **B.** False ☐

25. Genetic information can influence traits without being the only influence on every trait. **Intermediate · 2 pts**

A. True ☐ **B.** False ☐

Section C — Fill in the Blank — 20 marks

26. The hereditary molecule DNA is organised into structures called _____. **Basic · 2 pts**

Answer: _____

27. A functional region of DNA is commonly called a _____. **Basic · 2 pts**

Answer: _____

28. DNA copying before cell division is called DNA _____. **Basic · 2 pts**

Answer: _____

29. The division process that produces haploid gametes is _____. **Basic · 2 pts**

Answer: _____

30. The physical appearance or measurable characteristics of an organism form its _____. **Intermediate · 2 pts**

Answer: _____

31. The genetic constitution of an organism is its _____. **Intermediate · 2 pts**

Answer: _____

32. A change in DNA sequence is a _____. **Intermediate · 2 pts**

Answer: _____

33. The process by which information in a gene is used to make a functional product is gene _____. **Intermediate · 2 pts**

Answer: _____

34. Exchange of DNA between homologous chromosomes is called _____ over. **Intermediate · 2 pts**

Answer: _____

35. A cell containing two sets of homologous chromosomes is described as _____. **Intermediate · 2 pts**

Answer: _____

Section D — Column Matching — 10 marks

36–40. Match each term to its correct definition.

Column A	Answer	Column B
DNA	____	**A.** Functional DNA region
Gene	____	**B.** Organised DNA-protein structure
Chromosome	____	**C.** Produces haploid cells and reshuffles variation
Meiosis	____	**D.** Change in genetic material
Mutation	____	**E.** Stores hereditary information

Section E — Short Answer — 20 marks

41. Explain the relationship among DNA, genes and chromosomes. Advanced · 4 pts

42. Why is meiosis important for both chromosome-number stability and genetic variation in sexual reproduction? Advanced · 4 pts

43. Explain why a mutation is not automatically harmful. Advanced · 4 pts

44. How can two people with similar genes show different phenotypes? Advanced · 4 pts

45. A child has a recessive condition while both parents are unaffected. Explain a plausible inheritance pattern. Advanced · 4 pts

Candidate Signature: _____ **Invigilator Signature:** _____

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Marks Obtained: _____ / 100 Checked By: _____

Result / Grade: _____ Date Checked: _____

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Biology Comprehensive Practice Test 5 — Answer Key

Teacher reference: equivalent grammatically correct wording is acceptable for open-ended items when the meaning is preserved.

Section A — Multiple Choice

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

Section B — True / False

16. False
17. True
18. False
19. True
20. False
21. True
22. False
23. False
24. True
25. False

Section C — Fill in the Blank

26. chromosomes
27. gene
28. replication
29. meiosis
30. phenotype
31. genotype
32. mutation
33. expression
34. crossing
35. diploid

Section D — Column Matching

36. DNA — E
37. Gene — A
38. Chromosome — B
39. Meiosis — C
40. Mutation — D

Section E — Short Answer (Model Answers)

41. chromosomes; organise; proteins; genes; functional

42. reduction; haploid; cells; variation; through

43. location; effect; gene; product; regulation

44. environmental; effects; gene; regulation; developmental

45. carrier; parents; recessive; inheritance; child