

DUAT05 Model Question Paper

M.Sc. Data Science and BioAI

Model Set - 10 MCQs

Instructions: Choose the most appropriate answer from the four options given.

1. Choose the correct preposition to complete the sentence: "The researcher was confident ___ the accuracy of the experimental results."

- A. at
- B. about
- C. on
- D. by

2. Identify the grammatically correct sentence.

- A. Neither the samples nor the reagent were stored properly.
- B. Neither the samples nor the reagent was stored properly.
- C. Neither the samples nor the reagent are stored properly yesterday.
- D. Neither the samples nor the reagent have stored properly.

3. A solution contains 12 g of solute in 300 g of solution. What is the percentage by mass of the solute?

- A. 2%
- B. 3%
- C. 4%
- D. 5%

4. If $A = \{1, 3, 5, 7, 9\}$ and $B = \{3, 6, 9, 12\}$, then $A \cup B$ is:

- A. $\{3, 9\}$
- B. $\{1, 5, 7\}$
- C. $\{1, 3, 5, 6, 7, 9, 12\}$
- D. $\{1, 3, 5, 7, 9, 12\}$

5. If two events A and B are independent, with $P(A) = 0.4$ and $P(B) = 0.25$, then $P(A \cap B)$ is:

- A. 0.05
- B. 0.10
- C. 0.25
- D. 0.65

6. During transcription, genetic information is copied from:

- A. RNA to DNA
- B. DNA to RNA
- C. Protein to RNA
- D. Protein to DNA

7. The Michaelis constant K_m in enzyme kinetics is related to:

- A. The temperature at which the enzyme denatures
- B. The substrate concentration at half-maximal reaction velocity
- C. The molecular weight of the enzyme
- D. The total number of amino acids in the enzyme

8. CRISPR-Cas technology is mainly associated with:

- A. Genome editing

- B. Protein crystallisation
- C. Lipid extraction
- D. Chromatographic separation

9. Which of the following is an example of conformational isomerism?

- A. Cis-2-butene and trans-2-butene
- B. Ethanol and dimethyl ether
- C. Staggered and eclipsed forms of ethane
- D. Butane and 2-methylpropane

10. Which of the following represents the decimal number 10 in binary form?

- A. 1000
- B. 1001
- C. 1010
- D. 1100