# BRAC University
## Department of Computer Science and Engineering

CSE 443: Bioinformatics-I (B)

Quiz 03: Summer 2025 Time: 15 Minutes Marks: 15

| Name | | ID | | Section | |
|---|---|---|---|---|---|

1. Needleman–Wunsch guarantees the optimal global alignment. (True/False)
2. Local alignment can detect conserved domains even if the overall sequences are dissimilar. (True/-False)
3. Affine gap penalty treats long gaps more realistically than linear gap penalty. (True/False)
4. In local alignment, negative scores are reset to zero. (True/False)
5. Global alignment is always better than local alignment. (True/False)
6. Which algorithm is used for local alignment?
   (a) Needleman–Wunsch
   (b) Smith–Waterman
   (c) BLAST
   (d) FASTA
7. If match=+1, mismatch=-1, gap=-2, what is the optimal score of A vs C?
   (a) 1
   (b) -1
   (c) -2
   (d) 0
8. In affine gap penalties, if opening penalty=-5 and extension=-1, the cost of a gap of length 4 is:
   (a) -5
   (b) -8
   (c) -9
   (d) -4
9. In multiple alignment, runtime increases with:
   (a) Sequence length
   (b) Number of sequences
   (c) Both
   (d) None
10. Which one is a heuristic algorithm?
    (a) Needleman–Wunsch
    (b) BLAST
    (c) Smith–Waterman
    (d) DP for Multiple Alignment