

**GUJARAT NATIONAL LAW UNIVERSITY  
GANDHINAGAR**

Course: Advanced Sciences  
Semester-III (Batch: 2014-19)

Mid Semester Test: August-2015

Date: 25<sup>th</sup> August, 2014

Duration: 1 ½ hours

Max. Marks: 20

**Instructions:**

- Read the questions properly and write the answers in the given answer book.
- The respective marks for each question are indicated in-line.
- Do not write any thing on the question paper.
- Indicate correct question numbers in front of the answers.
- No questions or clarifications can be sought during the test period, answer as it is, giving reason, if any.

<b>Part-A</b>	<b>Marks</b>
Q.1 Answer the following questions: (a) Who coined the word nanotechnology and define what nanotechnology is. (b) How can you determine the presence of brick powder in red chilly powder? (c) What are dendrimers?	(3x1= 03)
Q.2 Write a note on <b>any two</b> of the following: (a) Top down approach (b) Bucky ball (c) Adulterants in food products.	(2x2= 04)
Q.3 What are carbon nanotubes? Explain its types, structure, mechanical, electrical and thermal properties.	(1x5= 05)

**OR**

Explain the classification of nanotechnology based on the dimensions and also explain electron confinement.

<b>Part-B</b>	
Q.4 Answer the following briefly: (a) Distinguish between "accession code and identifier". (b) What is a primary database? What are the important nucleic acid and protein sequence databases? (c) Briefly discuss the structure of tertiary protein.	(3x2= 06)
Q.5 Choose the correct answer: 1. You want to run a BLAST search with the following query sequence. MSLTVEIVATKPYEGQKPGTSGLRKKVKVFTQPNYTENFVQAILEANGAA LAGSTLVVGGDGRFYCKEAAEL Which of the following represent a valid choice. a) BLASTn b) BLASTp c) BLASTx d) tBLASTn	(4x0.5 =02)

2. Which of the following is an aromatic amino acid?
  - a) Alanine
  - b) Valine
  - c) Phenylalanine
  - d) Tryptophan
  
3. Beta pleated sheets are examples of protein's
  - a) Primary structure
  - b) Secondary structure
  - c) Tertiary structure
  - d) Quaternary structure
  
4. Which of the following is the protein structure database?
  - a) PDB
  - b) UniProt
  - c) EMBL
  - d) Swiss-Prot

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