RAN-2003001105020003

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B. Sc. (Biotechnology) (Sem. - V) Examination March - 2023

Introduction to Nanobiotechnology (BT-13)

Time: 2 Hours] **[Total Marks: 50**

સૂચના : / Instructions

(1) **નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.**
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ **B. Sc. (Biotechnology) (Sem. - V)**

Name of the Subject :

☛ **Introduction to Nanobiotechnology (BT-13)**

Subject Code No.: **2003001105020003**

Seat No.:

Student's Signature

(2) Figures to the right indicate full marks.

(3) Draw neat and labelled diagrams wherever necessary.

Q-1: Define/Answer in short Any Four: **(8)**

(a) What are Dendrimers give its two applications.

(b) State the usage of DNA tweezer and DNA actuators in nanobiotechnology.

(c) What are G-Quadruplexes?

(d) State and explain in short any two properties of Nanomaterials.

(e) Define Bionanotechnology.

(f) State advantages of Chemical Synthesis method of Nanoparticles

(g) What is Pulsed Laser Deposition?

(h) What is Top down approach for preparation of nanoparticles.

Q-2: Attempt Any Two: **(14)**

(a) Compare Ball Milling and Thermal methods used for synthesis of Nanoparticle

(b) Justify DNA as a Nanostructure

(c) Explain the Photocatalytic. Optical and Magnetic properties of nanoparticles.

(d) Justify the use of Nanoparticles in drug delivery.

Q-3: Explain in detail Any Two: **(14)**

(a) What is the role of CNT in improving the data quality of a Diagnostic equipment, give one example?

(b) Justify how DNA is a Nanostructure.

(c) Application of Protein Nanostructure.

(d) Describe the Sol-gel method for nanoparticle synthesis.

Q-4: Attempt Any Two of the following: **(14)**

(a) Give a detail account on photocatalytic activity of TiO_2 nanoparticles

(b) State and explain the forces and laws that do not apply to nanoparticles

(c) What are Dps and Ferrtin, give their applications.

(d) Write a note on: 'How Nanolithography can be used for nanoparticle / nanocomposite synthesis'?

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