

SUB.CODE: 20PMB2E2B

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**DHANALAKSHMI SRINIVASAN COLLEGE
OF ARTS & SCIENCE FOR WOMEN
(AUTONOMOUS)**



(For Candidates admitted from 2020-2021 onwards)

PG DEGREE EXAMINATIONS APRIL – 2021

**M.SC - MICROBIOLOGY
NANOTECHNOLOGY**

Time: 3 Hrs

Max.Marks: 75

PART - A

CHOOSE THE CORRECT ANSWER:

(10 X 1=10)

- Who first used the term nanotechnology and when?
 - Richard Feynman, 1959
 - Norio Taniguchi, 1974
 - Eric Drexler, 1986
 - Sumio Iijima, 1991
- A lipid bilayer structure that encloses an internal aqueous volume
 - Niosome
 - liposome
 - Solid lipid nanoparticle
 - All the above
- CVD stands for
 - Carbon vapour density
 - Chemical vapour density
 - Chemical vapour deposition
 - Carbon vapour deposition
- Spherical gold Nanoparticles are ----- dimensional nanomaterials
 - Zero
 - One
 - Two
 - Three
- Which is the technique is used to getting a three dimensional picture of nanoparticles
 - Transmission Electron Microscope
 - Scanning Electron Microscope
 - Simple Microscope
 - All the above
- Targeting drug delivery involves
 - Delivering a drug to the diseased part of the body
 - Delivering a drug from the factory to the targeted populations
 - Making more drug available to the affected population
 - None of above
- Which is the polymer capsule containing multiple liposomes
 - Capsosome
 - Mesosome
 - Polysome
 - Niosome

8. There are unique class of synthetic macromolecule having highly branched,three dimensional nanoscale architecture with very low polydispersity index and high functionality
- a) Dedrimers b) Neosomes c) Polysome d) Aquatosomes
9. Silver's anti-microbial potential increase by
- a) Decreased surface area b) Increased surface area
c) both a & b d) none of the above
10. TiO₂ Nanoparticles
- a) used as UV blocking pigments b) inorganic white pigments for paints
c) photoelectrochemical cells d) All the above.

PART - B

ANSWER ALL THE QUESTIONS:-

(5 x 7 = 35)

11. a) Write short notes on properties of Nanowires.

(OR)

- b) Briefly explain about the Liposomes.

12. a) How to synthesize silver nanoparticles by biological methods.

(OR)

- b) Write note on synthesis of nanoparticles by pyrolysis.

13. a) Comment on the role of Atomic Force Microscopy in characterization of nanoparticles.

(OR)

- b) Explain about the NMR in characterization of nanoparticles

14. a) Write the short notes on antibacterial and antifungal activity of nanoparticles.

(OR)

- b) Write notes on the herbicidal activity of nanoparticles.

15. a) Briefly explain the role DNA probing with nanoparticles.

(OR)

- b) Write the applications of gold nanoparticle conjugate in intracellular imaging .

PART - C

ANSWER ANY THREE QUESTIONS:-

(3 X 10 = 30)

16. Discuss in detail about the properties and applications of carbon nanotubes.
17. Explain in detail about physical and chemical methods for synthesis of nanoparticles
18. Write the role of scanning and transmission of Electron microscope in characterization of nanoparticles.
19. Write note on antiparasitic, insecticidal and mosquito larvicidal activity of nanoparticles
20. Write note on application of nanoparticles for drug targeting and delivery.