

QP CODE: D3BCH2404

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Reg. No : .....

Name : .....

**THIRD SEMESTER FYUGP EXAMINATION, NOVEMBER 2025****Discipline Specific Core (DSC) Course - Minor****CHE3MN208 : Biomolecules and Medicinal Chemistry****(Credits: 4)****Time: 2 Hours****Maximum Marks: 70****Section A****Answer the following questions. Each carries 3 marks (Ceiling: 24 marks)**

1.	List any three important applications of column chromatography.	BL1	CO2
2.	Define chemical shift in NMR spectroscopy.	BL1	CO1
3.	What are analgesics? Mention one commonly used analgesic.	BL2	CO4
4.	What is green chemistry?	BL1	CO5
5.	What is a chromophore? Give an example.	BL1	CO1
6.	Comment on the significance of surface to volume ratio of nanomaterials.	BL2	CO6
7.	Give the Fischer projection of the open chain form of D-glucose.	BL2	CO3
8.	What is meant by pharmacodynamics?	BL1	CO4
9.	Mention any three applications of green chemistry in daily life.	BL2	CO5
10.	Arrange the following radiations in the increasing order of energy and increasing order of wavelength UV, IR, microwave, visible.	BL2	CO1

**Section B****Answer the following questions. Each carries 6 marks (Ceiling: 36 Marks)**

11.	Differentiate between DNA and RNA with respect to structure, sugar, bases, and function.	BL2	CO3
12.	Describe the major biological functions of lipids in living systems.	BL1	CO3
13.	Explain the classification of nanomaterials based on their dimension.	BL1	CO6

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14.	Discuss the applications of nanomaterials for drug delivery in biomedical field.	BL2	CO6
15.	Draw the labelled schematic diagram of the proton NMR spectrum of acid-added ethanol.	BL3	CO1
16.	Describe the different types of molecular vibrations observed in infrared spectroscopy with suitable examples.	BL1	CO1
17.	Compare adsorption chromatography and partition chromatography based on principle, stationary phase, and applications.	BL2	CO2
18.	What are carbon nanotubes? Discuss its properties and applications.	BL1	CO6

### Section C

**Answer any one question. Each carries 10 marks (1 x 10 = 10 Marks)**

19.	Describe in detail the different levels of protein structure with suitable examples.	BL2	CO3
20.	What is rational drug design? Discuss the concepts of lead compound and lead modification with suitable examples.	BL1	CO4

**CO : Course Outcome**

**BL : Bloom's Taxonomy Levels** (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)