

QP CODE: D3BCH2403

(Pages: 2)

Reg. No :

Name :

THIRD SEMESTER FYUGP EXAMINATION, NOVEMBER 2025**Discipline Specific Core (DSC) Courses - Minor****CHE3MN207 : Applied Organic and Natural Products Chemistry****(Credits: 4)****Time: 2 Hours****Maximum Marks: 70****Section A****Answer the following questions. Each carries 3 marks (Ceiling: 24 marks)**

1.	Name the most commonly used internal standard in NMR spectroscopic measurements? What are the advantages of using it?	BL3	CO1
2.	What is the basic principle of a chromatographic technique?	BL2	CO2
3.	Give the source, structure and uses of sandalwood oil.	BL1	CO3
4.	How can you distinguish between alkanes and alkenes using IR spectroscopy?	BL3	CO1
5.	What are antibiotics? Give an example.	BL1	CO4
6.	What type of interactions are typically involved in a drug's binding to a receptor?	BL2	CO4
7.	What are the main focus of green chemistry?	BL2	CO5
8.	Mention any three applications of green chemistry in daily life.	BL2	CO5
9.	Comment on the significance of surface to volume ratio of nanomaterials.	BL3	CO6
10.	Write any three applications of metal nanoparticles.	BL2	CO6

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

11.	What are the different methods of preparation of nanoparticles? Give examples.	BL2	CO6
12.	Discuss the various applications of metal and semiconductor nanoparticles.	BL2	CO6

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13.	Discuss the synthesis of paracetamol from phenol.	BL1	CO4
14.	What are alkaloids? Explain the classification of alkaloids giving examples.	BL1	CO3
15.	Describe the different types of molecular vibrations observed in infrared spectroscopy with suitable examples.	BL1	CO1
16.	Discuss briefly the methods used for essential oil extraction. Mention the advantages and disadvantages of each extraction technique.	BL1	CO3
17.	Explain the principle, procedure, and applications of gas chromatography.	BL3	CO2
18.	Derive the Beer–Lambert’s law and state its significance.	BL3	CO1

Section C

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

19.	Discuss any ten principles of green chemistry.	BL2	CO5
20.	Explain how NMR spectrum is used to determine the structure of a molecule?	BL2	CO2

CO : Course Outcome

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