

Enrollment No. _____

School: School of Science
Program/s: BMS
Year 1st Semester: I

Examination: End Semester Examination
Examination year: December - 2022

Course Code: BM120 **Course Name:** Cell Biology
Date: 08/12/2022
Time: 8:30 am to 10:30 am

Total Marks: 40
Total Pages: 2

Instructions:

- Write each answer on a new page
- Draw neat and well-labelled diagrams wherever required

Instructions:

- Write each answer on a new page.
- Use of a calculator is permitted/not permitted.
- * COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q. No.	Details	Marks	COs*	BTL*
Q.1	<p>Q1 Do as directed (12M)</p> <p>A. Choose the correct option from the options given below (3Marks)</p> <p>1. Which part of the compound microscope helps in gathering and focusing light rays on the specimen to be viewed? a) Eyepiece lens b) Objective lens c) Condenser lens d) Magnifying lens</p> <p>2. In fluorescence microscopy, which of the following removes all light except the blue light? a) Exciter filter b) Barrier filter c) Dichroic mirror d) Mercury arc lamp</p> <p>3. Which of the following do not have a nucleus a) Nerve Cell b) Muscle cell c) RBC d) WBC</p> <p>B. Fill in the blanks with the appropriate answer (5Marks)</p> <p>1. Total Magnification can be obtained by adjusting the Magnifying power of _____ and _____.</p> <p>2. In the nucleus, the lipid bi-layers are separated by a thin space known as the _____.</p> <p>3. The _____ heterochromatin is composed of transcriptionally active regions that has the structural and functional characteristics of the heterochromatin</p> <p>4. At the nuclear envelope, the _____ and _____ type laminins provide a stiffness to the nucleus, and helps in chromatin remodelling during replication.</p>	12	CO1,2,3,4	BT1, BT2, BT3

	<p>5. The viroids are classified on the basis that the _____ replicate in the chloroplasts and the _____ type of virioids replicate in the nucleus and the nucleolus</p> <p>C. State whether the following statements are True/False "with justification" (4Marks)</p> <ol style="list-style-type: none"> 1. The role of the capsule in bacteria is to help the to transfer genetic information 2. Virulent phages reproduce by lysogenic cycle 3. Viroids code for viral proteins 4. Mycoplasmal cell is exactly similar to bacterial cell 			
<p>Q.2</p>	<p>Answer the following in one or two sentences (6 questions X 2 Marks=12 Marks)</p> <ol style="list-style-type: none"> 1. State the Significance of Beer-Lambert law in Spectroscopy. 2. What are the advantages of using Scanning electron microscopy? 3. What is the importance of the Stationary phase and Mobile phase in chromatography? 4. Can we separate amino acids using paper chromatography? Justify 5. Explain helical and enveloped viruses with an example each. 6. Refer to the image given below and answer the following questions <div data-bbox="473 976 802 1249" data-label="Diagram"> </div> <ol style="list-style-type: none"> b. How does DNA associate with the octamer? c. What is a solenoid? 	<p>12</p>	<p>CO1,2,3,4</p>	<p>BT1, BT2, BT3</p>
<p>Q.3</p>	<p>Answer the following in detail ANY FOUR (4 questions X 4Marks =16 Marks)</p> <ol style="list-style-type: none"> 1. Which molecules help in nuclear import? Explain. 2. How will you differentiate between a gram positive and gram negative cell. Explain with a neat diagram. 3. Discuss the structure and functions of the nuclear pore complex 4. With the help of diagrams, explain the principle used in Light microscopy. 5. What is HPLC? State the working of an HPLC. Which all molecules can be used in this as sample material? 6. What is the role of a Column in Chromatography? Citing suitable examples explain how it helps to separate protein/amino acid molecules 	<p>16</p>	<p>CO1,2,3,4</p>	<p>BT1, BT2, BT3</p>