Question Paper

Exam Date & Time: 25-Jul-2022 (10:00 AM - 12:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER B.Sc. NUCLEAR MEDICINE TECHNOLOGY DEGREE EXAMINATION - JULY 2022
SUBJECT: BNMT 101 CELL AND MOLECULAR BIOLOGY
(2016 RV SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

Draw neat and labelled diagram as and when required.

1)	Discuss in detail internal organization of nucleus.	(10)
2)	Write a detailed note on signal hypothesis.	(10)
3A)	Write a short note on export and import through nuclear pore complex.	(5)
3B)	Draw a well labelled diagram of Plasma membrane.	(5)
3C)	Discuss Electron transport chain.	(5)
3D)	Write short note on functions of Endoplasmic reticulum and golgi apparatus.	(5)
4A)	Differentiate between active and passive diffusion.	(2)
4B)	Mention some of the cell to cell communication modes.	(2)
4C)	What is translation?	(2)
4D)	What are F_o-F_1 particles?	(2)
4E)	What are peroxisomes?	(2)

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Question Paper

Exam Date & Time: 26-Jul-2022 (10:00 AM - 12:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER B.Sc. NUCLEAR MEDICINE TECHNOLOGY DEGREE EXAMINATION - JULY 2022
SUBJECT: BNMT 103 BASIC MATHEMATICS
(2016 RV SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

Answer all the questions of the following:

1) Evaluate: $\int_0^{\pi/2} \cos^3 x\, dx$ and $\int_1^2 (x^2 - 2x + 3)^5 (x - 1) dx$ (10)

(5+5 = 10 marks)

2A) Find out tangent and normal equations for: $2x^3 - 9xy + 2y^3 = 0$ at point (2, 1). (5)

2B) Explain the finite integration. (5)

3A) Find out the value of x from the equation: (5)

$$x \tan 30^0 . \text{Cos}^2 315^0 = \frac{cot^2\, 30^0 \tan 225^0}{sec 60^0}$$

3B) Explain briefly Numerical Integration. (5)

3C) Differentiate $\frac{x\, e^x}{x^2+1}$ w.r.to x (5)

3D) Explain logarithm properties with the examples. (5)

4A) Find x: $\log_7 x + \log_7 x^2 + \log_7 x^3 = 6$ (2)

4B) Solve $\lim_{n \to a} \frac{x-a}{\sqrt[3]{x^2} - \sqrt[3]{a^2}}$ (2)

4C) Find out the second derivative of the function: 4 sin 6x. cos 4x. (2)

4D) Find the value of $\frac{\sin 135^0 - \cos 240^0}{\cos 135^0 + \sin 420^0}$ (2)

4E) Define one-one function, onto function, even and odd function. (2)

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