



MONAD UNIVERSITY HAPUR (UP)

Programme: **B.Sc**

Semester: **II**

Course: **MTH-121 DIFFERENTIAL CALCULUS**

Assignment No: **2**

Due date of submission: **20.04.2018**

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme and Enrolment Number clearly at the top of the page.

Q.1 We know that the following points are essential to draw a curve.

Find out whether the curve is symmetric about any line or a point

Find the region for x for which y is well defined and real or the region for y for which x is real.

Find the Point of Intersection with the co-ordinate axes and the line of symmetry.

Find the tangents at the origin and at other points.

Find the asymptotes.

Find the derivatives. If +ve curve increases in that interval. If -ve curve decreases. If zero then the curve has a stationary point.

- a) Find the equation of the tangent at the point “ t ” to the cycloid $x = a(t + \sin t)$,
 $y = a(1 - \cos t)$
- b) Trace the curve

$$y^2 = x^3$$

Q.2

a) Express in terms of Beta function $\int_0^1 \frac{x^2}{\sqrt{1-x^5}} dx$.

b) Evaluate $\iint \frac{dx dy}{1+x^2+y^2}$

$$\text{if } 0 \leq y \leq 1, \text{ and } 0 \leq x \leq \sqrt{1+x^2}$$



MONAD UNIVERSITY HAPUR (UP)

Programme: **B.Sc**

Semester: **II**

Course: **MTH-122 GEOMETRY AND VECTOR CALCULUS**

Assignment No: **2**

Due date of submission: **20.04.2018**

Instructions

4. Write the responses to the assignment in your own handwriting.
5. Submit the responses to your HOD within the due date.
6. Write your Name, Programme and Enrolment Number clearly at the top of the page.

Q.1

- a) In physics we use algebraic formulae to calculate numbers that represent the results that we expect to obtain from measurements of physical systems or numbers that represent properties of physical systems that we cannot measure directly (e.g. kinetic energy). But we also use things called mathematical operators, entities that transform formulae in much the way that formulae transform numbers. If, for example, we have a formula that enables us to calculate the velocity of a given body at any instant of time, then differentiating that formula with respect to time yields a formula that enables us to calculate that body's acceleration at any given time. Among the various mathematical operators used in physics, one the most important is the vector derivative, if

$$\vec{r} = (t+1)i + (t^2 + t + 1)j + (t^3 + t^2 + t + 1)k \text{ find } \frac{d^2\vec{r}}{dt^2}$$

- b) Normally, we don't view a vector as such a row matrix. When we write vectors as matrices, we tend to write an n-dimensional vector as $n \times 1$ column matrix. But, in this case, we'll make an exception, and view this derivative matrix as a vector, called the gradient of f and denoted as ∇f . If $(x, y, z) = 3x^2y - y^3z^2$, Find grade f at the point (1,-2,-1)

Q.2

c) Prove that $\text{div } \vec{r} = 3$.

d) Prove that $\text{curl } \vec{r} = \vec{0}$



MONAD UNIVERSITY HAPUR (UP)

Programme: B.Sc.

Semester: II

Course: ELECTRICITY AND MAGNETISM

Assignment No: 2

Due date of submission: 20 April 2018

Instructions:

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme and Enrolment No. clearly at the top of the page.

Q1.

- a) Explain why magnetic monopole does not exist.
- b) Explain in detail the classification of magnetic materials on the basis of electron spin

Q 2

- a) You are aware of Maxwell's equation. Write and explain the physical significance of Maxwell's equation.
- b) Derive formula for growth of current in LR circuit.



MONAD UNIVERSITY HAPUR (UP)

Programme: B.Sc.

Semester: II

Course: MECHANICS RELATIVITY AND WAVE MOTIONS

Assignment No: 2

Due date of submission: 20 April 2018

Instructions:

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme and Enrolment No. clearly at the top of the page.

Q1.

- (a) Explain that the orbit of Geo-stationary satellite is equatorial and circular
- (b) As you are aware of the frame of reference .Explain Michelson Morley experiment and discuss the importance of its negative result.

Q 2

- (a) As you are aware of Collision .Explain elastic and inelastic Collision.
- (b) Discuss combine translation and rotational motion of a rigid body on a horizontal surface



Department of Chemistry

ASSIGNMENT-2

Course- B.Sc(PCM)/(ZBC)

Sub code-CHE-121

Sub-Inorganic Chemistry
year/2ndsem

Year- 1st

Last date of Submission-20/4/2018

Instruction

- 1) Write the responses to the assignment in your own handwriting.
- 2) Submit the responses to your HOD within the due date.
- 3) Write your name, program and Enrollment nu clearly at the top of the page.

Q1.

- a) Alkenes are unsaturated hydrocarbons. Can you mention general methods of preparation and properties of alkenes.
- b) Explain Markownikoffrule.

Q2.

- a)Give reaction mechanism of Diels-Alder reaction..
- b)Explain industrial applications of ethylene and propene.

ASSIGNMENT-2
ENVIRONMENTAL SCIENCE

HS-121

Assignment No: 2

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme, and Enrolment No. clearly at the top of the page.

Q. 1 (a) What is the concept of ecosystem?

(b) Draw the diagram of pyramid of energy.

Q. 2 (a) Short notes on Biosphere.

(b) What are the segments of environment?