# BSc MATHEMATICS

## SEMESTER-II

### FOUNDATION OF MATHEMATICS ( MM 1221)

## ASSIGNMENT QUESTIONS

1. Prove that 1 + 2 + 3 + 4 + ……..+ n = n(n+1)/2
2. Provethat $1^3 + 2^3 + 3^3 + 4^3 + \cdots + n^3 = (\frac{n(n+1)}{2})^2$
3. Show that $\lim_{x \to -3} \frac{x^2-1}{x+1} = -6$
4. Evaluate $\int (3x^6 - 2x^2 + 7x + 1)\, dx$
5. Evaluate $\int sin^2 x cosx dx$
6. Evaluate $\int_0^3 |2x - 5|\, dx$
7. Find the area of the surface generated by resolving the parametric curve x = t and y = $2t^2$, $0 \leq t \leq 1$ about the y – axis.
8. For the function $f(x) = 5x^3 + x - 7$ find a formula for the derivative of $f^{-1}$.
9. Evaluate $\int e^x cosx\, dx$
10. Evaluate $\frac{sin 3x}{2+c0s3x}\, dx$

## ASSIGNMENT QUESTIONS

## ADVANCED FINANCIAL ACCOUNTING

### QUESTIONS

**1.** Prepare a project report specifying the procedure for preparing final accounts with adjustments of a sole trading concern.

**2.** Tarun and Kunjoos commenced business as partners on April 1, 2012. Tarun contributed Rs.45,000 and Kunjoos Rs. 20,000 as their share of capital. The partners decided to share their profits in the ratio of 2:1. Tarun was entitled to a salary of Rs. 6,000 p.a. Interest on capital was to be provided @ 6% p.a. The drawings of Tarun and Kunjoos for the year ending March 31, 2012 were Rs.4,000 and Rs.8,000, respectively. The profits of the firm after providing Tarun salary and interest on capital were Rs.12,000.

**(2x5= 10 marks)**

# STATISTICS ASSIGNMENT 2019 BATCH

1. Find the value of K so that f(x) = Kx(1 − x)when 0≤x≤1 and 0 elsewhere is a pdf.
2. Let X be a continuous random variables with f(x)=2x if 0≤x≤1 and 0 elsewhere. Find the pdfofy = $8x^3$.
3. Two unbiased coins are tossed. Let X be the number of tails that show up and let Y=0, if the first coin show a head and Y=1 if it shows tail. Write down the joint probability function and the joint distribution of (X,Y).
4. Show that V(aX + bY) = $a^2$ V(X) + $b^2$V(Y) where X and Y are two independent random variables.
5. Find the mean and standard deviation of a random variable X with pdff(x) = 6x(1 − x); $0 \leq x \leq 1$and 0 elsewhere.
6. Two random variables X and Y are jointly continuous and density function is, f(x, y) = 2(x + y − 3x$y^2$); $0 < x < 1, 0 < y < 1$. Find E(X) and E(Y).
7. Let X be a random variable with pdff(x) = $\frac{x}{y}$; when x=1,2,3 and zero elsewhere. Find E$(X + 2)^2$.
8. Determine K such that the joint frequency function of a pair (x,y)of continuous random variable is $f(x, y) = K(xy + 2x + 3y + 6); o \leq x \leq 1$. Examine whether X and Y are independent.
9. For the bivariate density function, $f(x, y) = k(2x + 3)e^{-\frac{y}{2}}$;0<x<2, y>0. Show that $f(x, y) = f(x)f(y)$, k being a constant.
10. Fit a curve of the form $y = ax^b$ for the following data.

| X: | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Y: | 2.98 | 4.26 | 5.21 | 6.80 | 6.30 | 7.50. |

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## TOPICS FOR ASSIGNMENT AND CASE ANALYSIS: SEMESTER II

Language Course (B.A/B Sc English III)

ENVIRONMENTAL STUDIES: EN 1211.1

### ASSIGNMENT TOPICS

**Attempt any 2 topics each in 3-4 pages**

1) What is an ecosystem? What are the main types of ecosystems?.
2) The need for Environmental Studies.
3) Write an essay on effective solid waste management.
4) Explain the threats to biodiversity

(10 marks)

## Case Analysis

- Write a report on the possible ways of addressing the increasing heat during summer months in Kerala. What are the steps we could take as individuals.

(10 marks)

**SEMESTER II - Language Course 4:**

**MODERN ENGLISH GRAMMAR AND USAGE**

**(BA/BSc/B Com English IV)**

**EN 1212.1.**

**ASSIGNMENT TOPICS**

**Attempt these topics each in 3-4 pages**

1. Tense forms and their uses.
2. Nouns, Verbs, Adjectives and Adverbs

(10 marks)

**Case Analysis**

- Write one page each on any five proverbs in English. (10 marks)

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