

UNIVERSITY OF KERALA
SCHOOL OF DISTANCE EDUCATION
Fourth Semester B.Sc Mathematics -2020 Admission

Assignment Topics

Algebra and Calculus II MM 1441

1. Without using division of polynomials, find the remainder when

i) $x^3 - 2x + 4$ is divided by $x-2$

ii) $x^4 - 7x^2 + 3$ is divided by $x+1$

iii) $x^{40} - 8x^{12} + 3$ is divided by $x^4 - 1$

2) Find all roots of $f(x) = x^2 - 2x$ in $R[x]$ when

i) $R = \mathbb{Z}/15\mathbb{Z}$

ii) $R = \mathbb{Z}/30\mathbb{Z}$

3) Using Euclid's Algorithm find the g.c.d of i) $x^2 - x + 4$ and $x^3 + 2x^2 + 3x + 2$ in $F_3[x]$

ii) $3x^3 + 4x^2 + 3$ and $3x^3 + 4x^2 + 3x + 4$ in $F_5[x]$

4) Write x^3 in base $x+1$

Write $x^2 + 3x + 14$ in base i) $x+2$; ii) $x^2 + x + 1$

5) Find the volume of the cardioid

$r = a(1 - \cos\theta)$ about its axis

6) Evaluate the following triple integrals

i)
$$\int_0^1 \int_0^2 \int_0^2 x^2 yz \, dx$$

ii)
$$\int_0^1 \int_{y^2}^1 \int_1^{1-x} x dz dx dy$$

iii)
$$\int_0^\pi \int_0^{2x} \int_0^1 x^2 \sin y \, dx dy dz$$

Complementary IV E- Commerce CO -1431.1

1. Explain the importance and challenges of E-Commerce
2. What are the different models of E-Commerce
3. Explain the Intranet and Extranet with its advantages and limitations.
4. Describe different internet protocol
5. Write a short note on Internet and its uses on business.
6. Describe the E- marketing strategies.
7. Explain about the different networks.
8. Explain different modes of E- payment systems.
9. Discuss on the Information security environment in India.
10. Describe the emergence of Internet.
11. Describe the major security issues in e-commerce and its remedies
12. Discuss various means of e-advertising
13. Which are the business models based on the relationship of Transaction parties?

Course IV-ST 1431.1:

Testing of Hypothesis and Analysis of Variance

1. A die is thrown 9,000 times and a throw of 3 or 4 observed 3,240 times. Show that the dice cannot be regarded as an unbiased one and find the limits between which the probability of a throw of 3 or 4 lies.
2. Twenty people were attacked by a disease and only 18 were survived. Will you reject the hypothesis that the survival rate, if attacked by this disease, is 85% in favour of the hypothesis that is more at 5% level?
3. A sample of 400 observations has mean 95 and S.D 12. Could it be a random sample from a population with mean 98?
4. Fit a Poisson distribution to the following data and test the goodness of fit.

X	0	1	2	3	4	5	6
Y	275	72	30	7	5	2	1

5. The following table shows three age groups of boys and girls.
- The number of children affected by a non-infections disease and
 - The total number of children exposed to risk.

	Boys			Girls		
	I	II	III	I	II	III
a	60	25	48	96	18	42
b	240	470	530	530	200	210

- Test whether there are differences between the incidence rates in the three age group of boys.
 - Test whether the boys and girls are equally susceptible or not.
6. The varieties of A, B, C wheat were sown in 4 plots each and the following yields in quintals per acre were obtained.

A	8	4	6	7
B	7	5	5	3
C	2	5	4	4

Perform an analysis of variance on these data and discuss whether there is any significant difference between yields

Management Accounting CO-1431.2

Assignment Questions

- Explain the uses of accounting information.
- Calculate the trend percentages from the following figures of the company taking 2010 as base year.

Year	2010	2011	2012	2013	2014	2015
Sales (Rs. In lakhs)	30	40	48	56	70	80
Profit (Rs. In lakhs)	5	8	10	15	20	24

- Explain briefly the tools of Financial Statement Analysis?
- Calculate a) Current ratio and b) Liquid ratio from the following:

Cash	10000	Bills receivable	5000
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Cash at Bank	5000	Stock	9000
Debtors	20000	Prepaid expenses	3000
Creditors	16000	Outstanding expenses	2000
Bills Payable	4000		

5. Calculate debtors' turnover ratio and average debt collection period.
Credit sales Rs. 3, 60,000; Debtors Rs. 10,000; Bills receivable Rs. 2,000

6. From the following Balance Sheet of Nagarjuna Ltd. As on 31st March 2017

Balance Sheet
As on 31st March 2017

Liabilities	Rs.	Assets	Rs.
Current Liabilities:		Current assets:	
Creditors	6000	Cash	5000
Bills Payable	10000	10% Investments	15000
Outstanding expenses	1000	Sundry debtors	20000
Provision for tax	13000	Closing stock	30000
	30000		70000
6% debentures	70000	Fixed assets:	
7% preference shares	10000	Machinery 100000	
Equity share capital	50000	Less: Depreciation 50000	50000
(50000 shares @ Rs. 10)			80000
Reserves & Surplus	40000	Land & buildings	
	200000		200000

Other information:

i.	Net Sales	300000
ii.	Cost of goods sold	258000
iii.	Net Income before tax	20000
iv.	Net income after interest and tax	10000
v.	Market price of equity share (per share)	20

Calculate:

- a. Current ratio
- b. Acid test ratio
- c. Debt equity ratio
- d. Proprietary ratio
- e. Fixed asset to net worth ratio
- f. Gross profit ratio
- g. Operating ratio

- h. Net profit ratio
- i. Return on total assets
- j. Stock turnover ratio
- k. EPS
- l. Return on shareholders fund
- m. Price earnings ratio

7. What is the significance of ‘Return on capital employed’?

8. From the following two Balance Sheets on 31st March 2018 and 2019 of Ram raj ltd. Prepare:

- i. Schedule of changes in working capital
- ii. Funds flow statement

Balance Sheet

Liabilities	2018	2019	Assets	2018	2019
Share capital	325000	300000	Land & buildings	510000	450000
Profit & loss account	170000	100000	Plant & machinery	90000	100000
Debentures	150000	200000	Stock	110000	80000
Trade creditors	98000	75000	Debtors	30000	46000
Outstanding creditors	2000	5000	Cash	5000	4000
	745000	680000		745000	680000

9. Discuss the managerial uses of funds flow statement.

10. Differentiate between funds from operation and cash from operation.

TOPICS FOR ASSIGNMENT AND CASE ANALYSIS

BA/ B.Sc.

SEMESTER: IV

Language Course 8: READINGS IN LITERATURE

(BA/B.Sc. English V) EN1411.1

ASSIGNMENT TOPICS

Attempt all these topics each in 3-4 pages

- 1) Contribution of Wordsworth and Keats to English poetry.
- 2) Views of Nehru and Mandela on freedom

(10 marks)

Case Analysis

Write an essay on different literary forms and their features with suitable examples in about 8 pages.

(10 marks)

Additional Language Course: HINDI

ASSIGNMENT MAXIMUM MARKS- 10

CASE ANALYSIS MAXIMUM MARKS-10

ASSIGNMENT

I.HN-1411.-ADDITIONAL LANGUAGE –DRAMA AND TRANSLATION,
(नाटक और अनुवाद)

नाटक के तत्वों के आधार पर 'बिना दीवारों का घर' नाटक का विश्लेषण कीजिए |

या

अनुवाद की विभिन्न परिभाषा देकर अनुवाद का महत्व, अच्छे अनुवादक का गुण,
अनुवाद की समस्याएं आदि पर प्रकाश डालिए |

CASE ANALYSIS

पत्र के विभिन्न प्रकारों को सोदाहरण प्रस्तुत कीजिए |

BA/B Sc. ADDITIONAL LANGUAGE MALAYALAM

SEMESTER 4

ML 1411

വിനിമയം വിവർത്തനം സർഗാത്മകത

ASSIGNMENT

- വിവിധ തരം വിവർത്തന സിദ്ധാന്തങ്ങൾ പരിചയപ്പെടുത്തുക

CASE ANALYSIS

- പ്രതിഭയെക്കുറിച്ചുള്ള പാശ്ചാത്യ പൗരസ്ത്യ സമീപനങ്ങൾ വിശദമാക്കുക