

CHOICE BASED CREDIT SYSTEM

M.Com. THIRD SEMESTER DEGREE EXAMINATION NOVEMBER 2025

Management Science

Duration:3 Hours

Max Marks:70

I. Answer any THREE of the following : (3×5= 15 Marks)

1. Explain the phases of 'Management Science'.
2. The electric appliances company produces 2 products i.e., Refrigerator and Television. Production takes in 2 separate departments i.e., 1 & 2. Refrigerators are produced in department 1 and Televisions in department 2. The companies 2 products are sold on a weekly basis.
The weekly production cannot exceed 25 Refrigerators and 35 Televisions.
The company regularly employs total of 60 workers in 2 departments.
Refrigerator requires 2 man weeks labour while Television require 1 man weeks labour. A Refrigerator contributes a profit of Rs. 60 and Television contributes a profit of Rs. 40.
How many units of Refrigerator and Television should the company produce to realise the maximum profit. Formulate the above as LPP.
3. Determine basic feasible solution to the following transportation problem using North West Corner Rule.

		Sinks					Supply
		A	B	C	D	E	
Origins	P	2	11	10	3	7	4
	Q	1	4	7	2	1	8
	R	3	9	4	8	12	9
Demand		3	3	4	5	6	

4. The following details are available in respect of a firm
 - a. Annual usage 16000 units
 - b. Carrying costs per item for one year, Rs.2
 - c. Ordering Cost Rs.55 per order

Determine the Economic Order Quantity

II. Answer the following question : (1×10= 10 Marks)

5. Find a solution by graphical method

$$\text{Minimize } Z = 20x + 10y$$

$$\text{Subject to: } x + 2y \leq 40$$

$$3x + y \geq 30$$

$$4x + 3y \geq 60$$

$$x, y \geq 0$$

III. Answer any THREE of the following :

(3*15= 45 Marks)

6. "Management Science is the art of finding bad answers where otherwise worse exists" Comment.

7. Consider the following transportation problem with the given cost matrix:

Warehouse	Depot					Supply
	D1	D2	D3	D4	D5	
A	4	1	2	6	9	100
B	6	4	3	5	7	120
C	5	2	6	4	8	140
Demand	40	50	70	90	90	

Required:

1. Find the initial feasible solution using VAM method
2. Test the optimality and find the optimal solution (under MODI method)

8. Use the simplex method to solve the following LP problem

$$\text{Maximize } Z = 3x + 5y + 4z$$

Subject to constraints

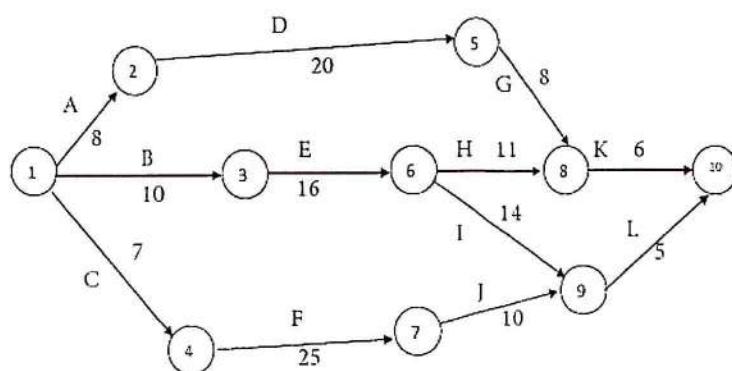
$$3x + 2y < 8$$

$$2x + 3y < 10$$

$$3x + 2y + 4y < 15$$

$$x, y, z \geq 0$$

9. Find out the completion time and the critical activities for the following project:



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Research Methodology

Duration:3 Hours

Max Marks:70

I. Answer any THREE of the following : (3×5= 15 Marks)

1. State the objectives of 'Business Research'.
2. Write short note on 'Categorical Data' with three examples each.
3. Define 'Sampling'. Explain different types of sampling.
4. Explain the importance of 'Research Reports'.

II. Answer the following question : (1×10= 10 Marks)

5. i) Explain Mc Nemer Test.
- ii) In a certain before and after experiments the responses observed from 1000 respondents when classified give the following information:

Before Treatment	After Treatment	
Unfavorable Treatment	Favorable Treatment	
Favorable Treatment	200	300
Unfavorable Treatment	400	100

Test at 5% I.o.s. whether there has been a significant change in people's attitude before or after the concerning experiments where the table value is 3.84.

III. Answer any THREE of the following : (3×15= 45 Marks)

6. i) Differentiate between alternative hypothesis and null hypothesis with relevant examples. (05 Marks)
- ii) What is a Model? Define variables and discuss the relationship of variables through a model. (10 Marks)

7. i) Explain ANOVA.
ii) The following represent the number of unit production per day turned out by 4 different workers using 5 different types of machines.

Workers	A	B	C	D	E
1	4	5	3	7	6
2	5	7	7	4	5
3	7	6	7	8	8
4	3	5	4	8	2

On the basis of the above information, can it be concluded that

- a) The mean productivity is the same for different machines.
- b) The workers do not differ with regard to productivity.

8. i) Differentiate between qualitative research and quantitative research. (05 Marks)

ii) Explain Primary Data. Mention various methods of collecting primary data. (10 Marks)

9. Explain the significance of a research report and narrate the various steps involved in writing such a report.

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Futures and Options

Duration:3 Hours

Max Marks:70

I. Answer any THREE of the following : (3×5= 15 Marks)

1. Define Risk. What are the factors influencing business risk?
2. Calculate the FRA settlement amount when:
Notional Principal - Rs. 10,00,000
Interest Rate - 5%
Forward Rate - 4.5%
Time - 90 Days
3. Define Derivatives. Explain the need for dealing in derivatives.
4. Write a note on Comparative Advantage Principle.

II. Answer the following question : (1×10= 10 Marks)

5. "Trade settlement comes in the final stage of the transaction process in the stock market. However, it follows a systematic process and a number of participants play a vital role in its smooth execution." Evaluate and analyze the statement.

III. Answer any THREE of the following : (3×15= 45 Marks)

6. "Exotic options are options contracts that differ from traditional options in their payment structures, expiration dates, and strike prices." Support this statement by explaining the different types of Exotic options.
7. "The financial terms stock market and commodity market are often used interchangeably by inexperienced investors. However, both of these are independent units with a lot of differences." Discuss.
8. Elaborate the mechanism of Swaps.
9. "A credit derivative is a contract whose value depends on the creditworthiness or a credit event experienced by the entity referenced in the contract." Explain.

CHOICE BASED CREDIT SYSTEM**M.Com. THIRD SEMESTER DEGREE EXAMINATION NOVEMBER 2025****Predictive Modelling and Marketing Analytics****Duration:3 Hours****Max Marks:70****I. Answer any THREE of the following : (3×5= 15 Marks)**

1. List five companies who sell Consumer Data.
2. State the importance of Regression analysis with an example.
3. Explain 'Clustering' in Data Analytics.
4. How can historical sales data be used to analyze pricing performance?

II. Answer the following question : (1×10= 10 Marks)

5. The following data relate to radio advertising expenditure, newspaper advertising expenditure and sales. Fit a regression model considering the independent variable on dependent variable.

Radio Advertising Expenditure	4	7	9	12
Newspaper Advertising Expenditure	1	2	5	8
Sales	7	12	17	20

Also, construct a research title for the above data set and identify the type of market research that can be considered from the above table. Justify your answers with supporting evidences.

(10 + 5= 15)

III. Answer any THREE of the following : (3×15= 45 Marks)

6. "Regression models are used to predict business sales". Comment with two current examples.
7. Explain 'Data Balancing'. Discuss the importance of data balancing before model training.
8. Discuss 'Market Sizing'. What types of data are required for market sizing? Support your answer with relevant examples.
9. Explain 'Promotion Analytics'. How can Social Media Analytics contribute to promotion analytics?

CHOICE BASED CREDIT SYSTEM**M.A, M.Com., M.Sc. THIRD SEMESTER DEGREE EXAMINATION NOVEMBER 2025****Human Resource Management****Duration:3 Hours****Max Marks:70****I. Answer any THREE of the following : (3×5= 15 Marks)**

1. Why are HR managers called as a 'Strategic Business Partner'?
2. Explain the strategies to manage deficit manpower with relevant examples.
3. Differentiate between 'Attrition' and 'Retention'.
4. Why are the status of HR manager changing?

II. Answer the following question : (1×10= 10 Marks)

5. Reena has recently been transferred to her organization's personnel department at a senior level enough for her to take immediate responsibility for the recruitment of clerks for their branch office. Since Reema has never done recruitment interview before, she asked for advice from her colleague Arthi, an experienced member of personnel staff. She wanted guidance on the sort of questions to be asked to obtain information from the candidates.

Arthi made Reena to learn all the techniques of interviewing, by making Reena to sit with her during her interviewing candidates for recruitment. Reena sat in on the interviews along with Arthi and she was very much impressed by the way Arthi went through in a polished and efficient manner. Reena however did not know to prepare properly in conducting selection interviews, due to personnel department staff shortages, she was asked to conduct five interviews in a day to recruit grade one clerks. Reena could not conduct recruitment interviews with confidence and preferred to sit with Arthi to see her conducting interviews and requested for more exposure by training in recruitment. Arthi assured Reena to help systematically during the next day or two letting her sit along with her, by arranging training on recruitment and also providing methodical short-term advice.

Questions:

- i) What are the problems of Reena? (2 Marks)
- ii) Briefly describe how you would train Reena properly for the job of recruitment interviewing? (3 Marks)
- iii) What short term advice would you give so that Reena can prepare to perform more effectively next week? (5 Marks)

III. Answer any THREE of the following :

(3×15= 45 Marks)

6. Explain different types of biases commonly seen in performance appraisal.
7. Define various activities involved in managing Human Resources.
8. "Attritional rates are increasing in most of the IT firms". List the various reasons for the critical problem.
9. A company pays its workers based on time. Management wants to switch to an incentive-based system. What challenges may arise during the transition?
