

MBA HOSPITAL AND HEALTH MANAGEMENT DEGREE EXAMINATIONS

Candidates admitted from 2010-2011

PAPER III – BIO-STATISTICS AND OPERATIONS RESEARCH

Q.P. Code : 432003

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages Time Marks  
(Max.) (Max.) (Max.)

1. Find mean, median, mode for the following data 17 40 min. 20

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
F	29	195	241	117	52	10	6	3	2

2. The hospital has 5 jobs A, B, C, D and E and 5 men V, W, X, Y and Z.  
The number of hours each man would perform each jobs as follows: 17 40 min. 20  
How should the jobs be allocated to minimize the total time?

	V	W	X	Y	Z
A	3	5	10	15	8
B	4	7	15	18	8
C	8	12	20	20	12
D	5	5	8	10	6
E	10	10	15	25	10

II. Write notes on :

1. List the applications of Biostatistics 4 10 min. 6  
 2. Brief on correlation and regression 4 10 min. 6  
 3. Calculate the standard deviation and its coefficients from the following set of observations 4 10 min. 6  
 9, 12, 10, 11, 8, 13, 11, 12, 10, 11, 11, 12, 11, 8, 11, 6  
 4. Discuss the advantages and disadvantages of non parametric tests 4 10 min. 6  
 5. What are the limitations of operations research? 4 10 min. 6  
 6. Discuss the main phases of OR 4 10 min. 6  
 7. What is Sensitivity analysis in an LPP? Discuss its significance. 4 10 min. 6  
 8. Explain Event Network Analysis with examples 4 10 min. 6  
 9. Find the correlation coefficient for 4 10 min. 6

Age	30	32	35	40	48	50	52	55	57	61
Sick Days	1	0	2	5	2	4	6	5	7	8

10. Find Quartile deviation and its coefficient for 4 10 min. 6

Marks	20	30	40	70	50	60
No. of students	8	12	20	4	10	6

[LA 0412]

Sub. Code: 2003

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(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages Time Marks  
(Max.) (Max.) (Max.)

1. Two types of drugs were used on 5 and 7 patients for reducing their weight Drug A was imported and drug B indigenous. The degrees in the weight after using the drugs for 6 month was as follows:

Drug A: 10 12 13 11 14

Drug B: 8 9 12 14 15 10 9

Is there a significant difference in the efficiency of the two drugs? If not, which drug should you buy?

2. Find the optimal assignment for the assignment problem with the following cost matrix

	I	II	III	IV
A	5	3	1	8
B	7	9	2	6
C	6	4	5	7
D	5	7	7	6

II. Write notes on :

1. Find out the Karl Pearson's coefficient of correlation

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

2. Distinguish between the followings:

- Statistics and Parameter
- Confidence interval and significance level
- Point estimation and Interval estimation

4 10 6

- 3) 500 students at school where graded according to their

intelligence and the economic condition of their homes.

Examine whether there is any association between

economic condition at home and intelligence

4 10 6

		Intelligence	
		Good	Bad
Economic condition	Rich	85	75
	Poor	165	175

4. Distinguish between correlation and regression? 4 10 6

5. Describe the importance of testing hypothesis 4 10 6

6. Discuss Type I and Type II error? 4 10 6

7. Use the graphical method to solve the following problem 4 10 6

Maximize  $z = 2x_1 + 3x_2$

Constraints:

$x_1 + x_2 \leq 1$

$3x_1 + x_2 \leq 4$

$x_1, x_2 \geq 0$

8. Describe the scope of operation Research in Management. 4 10 6

9. What are the characteristics and limitations of operations research? 4 10 6

10. The daily earnings of a vendor for a period of 40 days are given below. 4 10 6

Daily Earnings	118-126	127-135	136-144	145- 153	154- 162	163- 171	172-180	Total
No. of days	3	5	9	12	5	4	2	40

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[LB 1012]

OCTOBER 2012

Sub. Code: 2003

MBA HOSPITAL AND HEALTH SYSTEM  
MANAGEMENT DEGREE EXAMINATION  
FIRST YEAR

(for candidates 2010 – 2011)

PAPER III – BIOSTATISTICS AND OPERATION RESEARCH

Q.P. Code : 432003

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages Time Marks  
(Max.)(Max.)(Max.)

1. A company has factories A, B, and C which supply warehouses at D, E, F and G. Monthly factory capacities are 160, 150 and 190 units respectively. Monthly warehouse requirements are 80, 90, 110 and 160 units respectively unit shipping costs (in Rs.) are as follows.

17      40      20

Factory	To			
	D	E	F	G
A	40	48	38	37
B	40	49	52	51
C	39	38	40	43

Determine the optimum distribution for this company to minimize the shipping costs.

2. Find the missing frequency from the following data. If arithmetic mean is 28 of the data given below.

17      40      20

Profit per shop	0-10	10-20	20-30	30-40	40-50	50-60
No. of Shop	12	18	27	?	17	6

II. Write Notes on :

1. Define statistics. Discuss the application of statistics. 4      10      6
2. Explain the advantages of classification of data. Discuss the different methods of classification. 4      10      6
3. Bring out the properties of harmonic mean and geometric mean. 4      10      6

PTO

4. Explain the relationship among quartile deviation, mean deviation and standard deviation.	4	10	6
5. Explain the concept of correlation between two variables.	4	10	6
6. Explain clearly the procedure generally followed in testing of hypothesis.	4	10	6
7. Explain the technical issue in handling of simplex method.	4	10	6
8. Explain the concept of Hungarian model.	4	10	6
9. Write a note of selection matching with the person in job design.	4	10	6
10. Explain the concept of Event network Analysis.	4	10	6

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**MBA HOSPITAL AND HEALTH MANAGEMENT DEGREE EXAMINATION  
FIRST YEAR**

(for candidates 2010 – 2011 onwards)

**PAPER III – BIostatISTICS AND OPERATION RESEARCH**

*Q.P. Code : 432003*

**Time : 3 hours**

**Maximum : 100 marks**

**I. Elaborate on:**

**(2x20=40)**

1. Write down the steps involved in graphical and simplex methods of solving optimization problems.
2. Explain the concepts (i) real-time information and control and (ii) Requirement of effective control techniques and Budget.

**II. Write notes on :**

**(10X6=60)**

1. Define and compare the characteristics of Arithmetic Mean, the Geometric Mean and the Harmonic Mean.
2. Explain the method of calculating coefficient of Variation and also state the purpose of the coefficient of variation.
3. The following scores represent a nurses assessment (x) and a physician's assessment(y) of the condition of 10 patients at time of admission to a trauma center.

X:    18    13    18    15    10    12    8    4    7    3

Y:    23    20    18    16    14    11    10    7    6    4

Construct a scatter diagram for these data and interpret the result.

4. Explain the meaning of regression and the method of computing regression equations.
5. Explain the test procedure for difference of two means in large regression equations.
6. List out the advantages and disadvantages of nonparametric tests.
7. Explain dual simplex method in Linear Programming theory.
8. Explain Hungarian method by giving an example.
9. How to orient and socialize a new employee?
10. What are the challenges created by information?

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