## Program: BE Mechanical Engineering

## Curriculum Scheme: Revised 2012

## Examination: Final Year Semester VII

## Course Code: MEE7019 and Course Name: Operations Research

Time: 1 hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	In Graphical solution of maximization problem, the line, which we move from origin to
Ontion A:	Any one side of the polygon is
Option A.	
Option B:	
	Iso profit line
Option D:	An imaginary line
Q2.	To convert ≥ inequality constraints into equality we must
Option A:	add a surplus variable
Option B:	subtract an artificial variable
Option C:	subtract a surplus variable and add artificial variable
Option D:	add a surplus variable and subtract an artificial variable
Q3.	In cyclic traveling salesman problem the elements of diagonal from left top to right
	bottom are
Option A:	Zeros
Option B:	All negative elements
Option C:	All infinity
Option D:	all ones
Q4.	If average cost per unit time over a period of n + 1 (ATCn + 1) years is more than the
	cost over a period of n years (ATCn), then
Option A:	running cost for the year n + 1 is equal to ATC <sub>n</sub>
Option B:	running cost for the year n + 1 is less than ATC <sub>n</sub>
Option C:	running cost for the year n + 1 is more than ATC <sub>n</sub>
Option D:	can't predict
Q5.	Arrival $\rightarrow$ Service $\rightarrow$ Service $\rightarrow$ Out The figure given represents:
Option A:	Single channel single phase system
Option B:	Multichannel single-phase system
Option C:	Single channel multiphase system
Option D:	Multichannel multiphase system

Q6.	In a two-person zero sum game, the following does not hold correct
Option A:	Row player is always a loser
Option B:	Column player is always a winner
Option C:	Column player always minimizes losses
Option D:	If one loses, the other gains
Q7.	В
	X Y Z
	P 1 7 3
	A Q 5 6 4
	R 7 2 0
	Consider the matrix given, which is a pay off matrix of a game. Identify the dominance in
	it.
Option A:	P dominates Q
Option B:	Y dominates Z
Option C:	Q dominates R
Option D:	Z dominates Y
Q8.	The best way of improving the productivity of capital is:
Option A:	Purchase automatic machines
Option B:	Effective labour control
Option C:	To use good financial management
Option D:	Productivity of capital is to be increased through effective materials management
Q9.	The decision criterion for the shortest route problem is
Option A:	minimization of the total number of cities visited
Option B:	minimization of the distance traveled
Option C:	minimization of the total cost
Option D:	minimization of the route itself
Q10.	If we are going to simulate an inventory problem, we must
Option A:	run the simulation for many days
Option B:	run the simulation once, for a relative short period of time
Option C:	run the simulation for many days many times, i.e., using multiple sets of random
	numbers
Option D:	run the simulation for many days many times, i.e., using same sets of random
011	In the ontimal solution, more than one empty cells have their opportunity cost as zero
	it indicates
Option A:	The solution is not optimal
Option B:	The problem has alternate solution

Option C:	Something wrong in the solution
Option D:	The problem will cycle
Q12.	This department is responsible for the development of queuing theory:
Option A:	Railway station
Option B:	Municipal office
Option C:	Telephone department
Option D:	Health department
Q13.	Successful use of the simulation approach requires both knowledge of the problem to
	be solved and knowledge of
Option A:	computer programming
Option B:	engineering or computer science
Option C:	probability distributions and statistical analysis
Option D:	social sciences
Q14.	In dynamic programming, the output to stage n become the input to
Option A:	stage n-1
Option B:	stage n itself
Option C:	stage n+1
Option D:	stage n-2
Q15.	The equation describing the relationship between stages is called a
Option A:	transformation function
Option B:	return
Option C:	relationship function
Option D:	input-output function
Q16.	When D=18000, holding cost=Rs.1.20, set-up cost=Rs.400 ,EOQ =
Option A:	3465
Option B:	3750
Option C:	3500
Option D:	4000
Q17.	The time between the placement of an order and its delivery is called as
Option A:	buffer time
Option B:	lead time
Option C:	Economic Order Quantity
Option D:	capital time
Q18.	Which of the following is correct?
Option A:	Re-order quantity in a fixed order-interval system equals EOQ

Option B:	Review period of the item is always kept higher than its lead time
Option C:	Re-order level of an item is always more than its minimum stock
Option D:	Buffer stock is the total stock kept to meet the demand during lead time
Q19.	A game is said to be strictly determinable if
Option A:	maximin value equal to minimax value
Option B:	maximin value is less than or equal to minimax value
Option C:	maximin value is greater than or equal to minimax value
Option D:	maximin value is not equal to minimax value
Q20.	A mixed strategy game can be solved by
Option A:	Simplex method
Option B:	Hungarian method
Option C:	Graphical method
Option D:	Degeneracy
Q21.	Every basic feasible solution of a general assignment problem, having a square pay-off
	matrix of order, n should have assignments equal to
Option A:	2n+1
Option B:	2n-1
Option C:	m+n-1
Option D:	m+n
Q22.	In a transportation problem, we must make the number of and
Ontion A:	equal.
Option A:	destinations; sources
Option B:	units supplied; units demanded
Option C:	columns; rows
Option D:	positive cost coefficients; negative cost coefficients
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Q23.	The occurrence of degeneracy while solving a transportation problem means that
Option A:	The set time see the set for the
Option B:	The solution so obtained is not feasible
Option C:	The few allocations become negative
Option D:	Non negative value counted
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Q24.	study of various factors impacting a particular operation. This leads to more informed
Option A:	Management processes
Option B:	Decision making
Option C:	Procedures
Option D:	Analysis
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Q25.	Which statement characterizes standard form of a linear programming problem?
Option A:	Constraints are given by inequalities of any type
Option B:	Constraints are given only by inequalities of >= type
Option C:	Constraints are given only by inequalities of <= type
Option D:	Constraints are given only by inequalities of = type