University of Mumbai
Examination 2020
Examinations Commencing from 7th January 2021 to 20th January 2021
Program: **Electronics Engineering**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ILO7015 and Course Name :Operation Research

Time: 2 hour   Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Operations Research approach is _____.
Option A:	multi-disciplinary
Option B:	scientific
Option C:	intuitive
Option D:	collect essential data
2.	A feasible solution to a linear programming problem _____.
Option A:	must satisfy all the constraints of the problem simultaneously
Option B:	need not satisfy all of the constraints, only some of them
Option C:	must be a corner point of the feasible region.
Option D:	must optimize the value of the objective function
3.	If any value in XB column of final simplex table is negative, then the solution is _____.
Option A:	indefinite
Option B:	infeasible
Option C:	bounded
Option D:	no solution
4.	For any primal problem and its dual_____.
Option A:	optimal value of objective function is same
Option B:	dual will have an optimal solution iff primal does too
Option C:	primal will have an optimal solution iff dual does too
Option D:	both primal and dual cannot be infeasible
5.	The difference between total float and head event slack is _____
Option A:	free float
Option B:	independent float
Option C:	interference float
Option D:	linear float

6.	An optimal assignment requires that the maximum number of lines which can be drawn through squares with zero opportunity cost should be equal to the number of _____.
Option A:	rows or columns
Option B:	rows and columns
Option C:	rows+columns- 1
Option D:	rows-columns.
7.	To proceed with the Modified Distribution method algorithm for solving an transportation problem, the number of dummy allocations need to be added are_____.
Option A:	n
Option B:	n-1
Option C:	2n-1
Option D:	n-2
8.	Select the correct statement
Option A:	EOQ is that quantity at which price paid by the buyer is minimum
Option B:	If annual demand doubles with all other parameters remaining constant, the Economic Order Quantity is doubled
Option C:	Total ordering cost equals holding cost
Option D:	Stock out cost is never permitted
9.	Service mechanism in a queuing system is characterized by _____
Option A:	customers behavior
Option B:	servers behavior
Option C:	customers in the system
Option D:	server in the system
10.	The objective of network analysis is to_____.
Option A:	minimize total project duration
Option B:	minimize toTal project cost
Option C:	minimize production delays, interruption and conflicts
Option D:	maximize total project duration
11.	In program evaluation review technique network each activity time assume a beta distribution because_____
Option A:	it is a unimodal distribution that provides information regarding the uncertainty of time estimates of activities
Option B:	it has got finite non-negative error
Option C:	it need not be symmetrical about model value
Option D:	the project is progressing well
12.	If there is no non-negative replacement ratio in solving a Linear

	Programming Problem then the solution is _____.
Option A:	feasible
Option B:	bounded
Option C:	unbounded
Option D:	infinite
13.	The calling population is considered to be infinite when _____.
Option A:	all customers arrive at once
Option B:	capacity of the system is infinite
Option C:	service rate is faster than arrival rate
Option D:	arrivals are independent of each other
14.	In marking assignments, which of the following should be preferred?
Option A:	Only row having single zero
Option B:	Only column having single zero
Option C:	Only row/column having single zero
Option D:	Column having more than one zero
15.	A petrol pump have one pump; Vehicles arrive at the petrol pump according to poison input process at average of 12 per hour. The service time follows exponential distribution with a mean of 4 minutes. The pumps are expected to be idle for _____.
Option A:	3/5
Option B:	4/5
Option C:	5/3
Option D:	6/5
16.	If the order quantity (size of order) is increased, _____
Option A:	holding costs decrease and ordering costs increase
Option B:	holding costs increase and ordering costs decrease
Option C:	the total costs increase and then decrease
Option D:	storage cost as well as stock-out cost increase
17.	_____ is a mathematical technique used to solve the problem of allocating limited resource among the competing activities
Option A:	Linear Programming problem
Option B:	Assignment Problem
Option C:	Replacement Problem
Option D:	Non linear Programming Problem
18.	A mixed strategy game can be solved by _____.
Option A:	Simplex method
Option B:	Hungarian method

Option C:	Graphical method
Option D:	Degeneracy
19.	The activity cost corresponding to the crash time is called the _____.
Option A:	critical time
Option B:	normal time
Option C:	cost slope
Option D:	crash cost
20.	A set of feasible solution to a Linear Programming Problem is _____
Option A:	convex
Option B:	polygon
Option C:	triangle
Option D:	bold

Q2	Solve any Two Questions out of Three 10 marks each
A	*Explain the phases of an operation research study.*
B	*Define and explain artificial variable*
C	*Differentiate between primal and dual in LLP.*
Q3.	Solve any Two Questions out of Three 10 marks each
A	*Explain dummy activity and network scheduling*
B	*Explain the steps involved in forward pass and backward pass .*
C	*Explain in detail about various phases in project management.*