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Total No. of Pages : 02

Total No. of Questions : 08

M.Tech.(ECE) (EL-I 2016 Batch) (Sem.-2)**RELIABILITY OF ELECTRONICS COMMUNICATION SYSTEMS****Subject Code : MTEC-204 C****M.Code : 74283****Time : 3 Hrs.****Max. Marks : 100****INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1.
 - a) Write in detail about replacement processes and policies.
 - b) Explain different modes of failures and life characteristics curve of failure.
2. Explain various kinds of systems. Calculate the reliability of a system having :
 - a) Series components
 - b) Parallel components
 - c) Parallel series components
3. How a product is evolved? Explain product development cycles using value engineering approach.
4.
 - a) What are the various factors affecting human reliability. Explain different methods for predicting the same .
 - b) Explain the concept of safety margins in critical devices. What will be the effect of increasing safety margins?
5.
 - a) What is the application of Weibull distribution?
 - b) Explain the tie set and cut set method for predicting reliability.



6. Explain the various terms using examples:
 - a) Down time
 - b) Up time ratio
 - c) Mean time between failures
 - d) Operating time
 - e) Availability
 - f) Confidence level
 - g) Mean life
 - h) Corrective maintenance down time
 - i) Mission time availability
 - j) Reliability
7.
 - a) Elaborate various kind of testing methods for equipments
 - b) What do you mean by stand by system? Explain various stand by redundancy.
8.
 - a) A car fleet owner finds from his past records the cost per year of running a car and its resale value as given below. The purchase of the car is Rs 25000. At what stage should the car be replaced?

Year of operation	Resale price at the end of year	Annual operating cost	Annual maintenance cost
1	15000	6300	300
2	13500	7000	500
3	12000	7700	1000
4	9000	9500	1500
5	8000	11500	2500
6	7500	13000	3500
7	7000	14300	4500

- b) Explain various types of maintenance with equation of maintainability.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.