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Register Number:

Name of the Candidate:

DIPLOMA EXAMINATION, 2010

(QUALITY MANAGEMENT)

(PAPER-IV)

140. QUALITY ASSURANCE

Dec.) (Time: 3 Hours

Maximum: 100 Marks

Answer any FIVE questions (5×20=100)

All questions carry equal marks

1. a) Explain the single sampling plan with a flow chart. (10)

b) Construct OC curve for single sampling plan with following data:
N=1,500
N=150
and C=4 (10)

2. a) Explain the following terms related to sampling plans:

i) Producer's risk

ii) Consumer's risk

iii) AQL

and iv) LTPD (10)

b) A single sampling plan uses a sample size of 15, and acceptance number 1, using hyper geometric probabilities, compute the probability of acceptance of lot of 50 articles 2% defective. (10)

3. a) Explain uses of IS 2500 Part-I. (10)

b) Describe ATI and ASN concepts. (10)

4. a) Explain switching rules for normal tightened and reduced inspection. (10)

b) Draw an AOQ curve for single sampling plan for n=115 and c=4. Also determine AOQL. (10)

5. a) Explain variability known range method with double specification limit with an example. (10)

b) Explain the uses of IS 2500 PART-II. (10)

6. a) Explain variability known standard deviation method with single specification limit with an example. (10)

b) Explain the advantages of acceptance sampling by variables. (10)

7. Describe sampling plan with variability unknown range method with single and double specification limit. (20)

8. a) Discuss the uses of IS-2500 Part-II with reference to acceptance sampling plans for variables with variability unknown standard deviation and range method. (10)

b) Design a sampling plan by variability unknown range method at an inspection level of 1V and AQL of 25%for purchase of 5HP disel engines. Decide lot of 500 with 10 engines selected at random having

HP as: 5.0, 4.95, 4.98, 5.5, 5.4, 5.13, 5.33, 4.99, 4.75, 5.3

(10)

9. a) Describe the active partial and standby redundancy. (10)

b) Explain the following: (10)

i)Hazard rate

ii) MTBF and MTTF.

iii) Active redundancy

and iv) Stand by redundancy

10. a) What is system reliability? With examples explain system reliability with components in parallel and mixed configuration. (10)

b) Write short notes on the availability and maintainability concepts. (10)

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