Unit 13 - Week 11

Assignment 11

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-15, 23:59 IST.

1) Which of the following is an advantage of acceptance sampling? 1 point

a. Acceptance sampling requires planning and documentation of the acceptance-sampling procedure whereas 100% inspection does not.
b. Fewer personnel are involved in inspection activities.
c. There are risks of accepting "bad" lots and rejecting "good" lots.
d. Less information is usually generated about the product or about the process that manufactured the product.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

2) What is the function of operating characteristic (OC) curve? 1 point

a. OC curve has no effect on sampling plans.
b. The OC curve plots the probability of accepting the lot versus the lot fraction defectives.
c. OC curve becomes more like the idealized OC curve shape as the sample size decreases.
d. OC curve displays the discriminatory power of the sampling plan.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

3) What will be the average outgoing quality (AOQ) for N = 5000, n = 70, and c = 3? Suppose that the process average nonconforming rate is 2%. 1 point

a. 0.9466
b. 0.0186
c. 0.0127
d. 0.0093

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

4) What will be the value of average total inspection (ATI) for the sampling plan N = 1200, n = 50, c = 1. Suppose that the process average nonconforming rate is 3%. 1 point

a. 842.50
b. 687.20
c. 459.60
d. 558.30

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

5) For the double sampling plan N = 2000, n_1 = 80, c_1 = 1, r_1 = 3, n_2 = 100, c_2 = 2, r_2 = 3, find the average sample number for batches with a proportion nonconforming of 1.5%, assuming no curtailment. 1 point

a. 101.6
b. 105.8
c. 107.1
d. 106.2

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

6) Would you prefer the stated double sampling plan or a single sampling plan with n = 100, c = 2 in order to minimize ASN for the data given in question number 5? 1 point

a. Both the plans are equal and anyone can be chosen.
b. Single sampling plan should be chosen if the objective is to minimize ASN.
c. Double sampling plan should be chosen if the objective is to minimize ASN.
d. None of these.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

7) The diameter of an axle must lie within a desirable upper and lower bound. Consequently, if the process average diameter is below 45 mm or above 47 mm, the desired probability of lot acceptance is 0.10. Let the producer's risk be 0.05 and the process standard deviation of the axle diameters be 0.6 mm. Find the variable acceptance sampling plan. Which of the following statement is correct regarding variable sampling plan? 1 point

a. If the sample average is less than 45.412 mm or greater than 46.588 mm, the lot is rejected.
b. A random sample of size 4 is chosen from the lot.
c. The lower acceptance level is 45.412 and the upper acceptance limit is 47.588.
d. None of these

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.
b.

8) What is the major difference between MIL-STD-105E and ANSI/ASQC Z1.4 sampling plans? 1 point

a. The term *non-conforming* is substituted for *defect* in ANSI/ASQC Z1.4.
b. An optimal procedure for switching from normal inspection to reduced inspection without satisfying the limit number criterion is included in ANSI/ASQC Z1.4.
c. The scheme aspect of sampling is emphasized in ANSI/ASQC Z1.4.
d. All of the above.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

9) Find the average total inspection for lots with an incoming proportion nonconforming of 0.03 for a double sampling plan with lot size 4000 given by the following parameters: $n_1 = 50, c_1 = 1, r_1 = 5, n_2 = 100, c_2 = 5, r_2 = 6$. 1 point

a. 721.59
b. 789.25
c. 854.64
d. 931.09

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

10) Let's consider a double sampling plan of lot size 3000 given by the following parameters: $n_1 = 40, c_1 = 1, r_1 = 5, n_2 = 80, c_2 = 5, r_2 = 6$. For a lot proportion nonconforming value of p = 0.03, find the probability of accepting such lots. 1 point

a. 66.35%
b. 22.59%
c. 74.68%
d. 88.89%

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

11) What will be the single sampling plan that will reject lots that are 1.3% nonconforming 8% of the time? Use acceptance numbers of 3. 1 point

a. 36
b. 77
c. 124
d. 228

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

12) Which type of OC curve is preferred for a stream of lots in which the lot size is at least 10 times large as compared to the sample size and which probability distribution is followed? 1 point

a. Type A OC Curve with binomial distribution
b. Type B OC Curve with Poisson distribution
c. Type B OC Curve with binomial distribution
d. Type A OC Curve with Poisson distribution

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

13) Which of the following statement is true? 1 point

a. A sampling system determines the fate of a lot based on a certain sample size and acceptance criteria.
b. Tightened inspection has the most stringent requirements and the most discriminatory power.
c. A sampling scheme is indexed by lot size and either AQL, LQL, or AOQL.
d. When tightened inspection is in effect, normal inspection is institute when 5 consecutive lots are accepted upon original inspection.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.
c.
d.

14) In a Dodge-Romig plan when the lot size is 550, the LQL is 5%, and the process average is 0.85% nonconforming what will be the value of AOQL? A single sampling plan is desired. 1 point

a. 0.92
b. 0.99
c. 1.1
d. 1.2

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

15) Which of the following is one of the advantages of variable sampling plan? 1 point

a. For a comparable level of protection as specified by the producer's risk α, the acceptable quality level (AQL), the consumer's risk β, and the limiting quality level (LQL), sample sizes are smaller for a variable plan than for an attribute plan.
b. Each quality characteristic requires a separate sampling plan. Because the number of quality characteristics is usually large, this implies that several sampling plans must be monitored. With attribute sampling plans, several variables can be combined to form a single attribute plan.
c. The administrative and unit inspection costs are usually higher for variable plans than for attribute plans. The measuring instruments are more expensive because an exact measurement value is taken.
d. To make inferences from the variable sampling plans, we must know or estimate the distribution of the quality characteristic for the process under consideration.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.