Shivaji University, Kolhapur

Question Bank For Mar 2022 (Summer) Examination

Subject Code: 79701 Subject Name: Statistics Paper XII

Multiple Choice Questions (40)

1) What will be the output of the following R program?

```
x = 0:6
x[3]
```

a) 0 b) 1
c) 2 d) 3

2) Which one of the following is not a basic datatype?

a) Numeric b) Data frame
c) Character d) Integer

3) What is the length of b?

```
b <- 3:8
```

a) 5 b) 7
c) 8 d) 6

4) _____ function returns a vector of the same size as x with the elements arranged in increasing order.

a) sort( ) b) orderasc( )
c) orderby( ) d) sequence( )

5) EWMA charts are better than Shewhart control charts in detecting the _____ shifts.

a) Large process b) Medium process
c) Small process d) Every process

6) Process capability tests are a part of _____ step of DMAIC process.

a) Define b) Improvement
c) Measure d) Control

7) In acceptance sampling, when there is a finite probability that the lot may be accepted even if the quality is not really good, is called _____

a) Consumer's risk b) Producer's risk
c) Operator's risk d) Owner's risk

8) A decision rule to accept or reject a lot based on the results of one random sample is called a _____

a) Random-sampling plan
b) Double-sampling plan
c) Sequential-sampling plan
d) Single-sampling plan

9) Which of the following command is used to print an object "x" in R?

a) printf(x)
b) print(x)
c) printx
d) print[x]

10) Which of the following is used for Statistical analysis in R language?

a) RStudio
b) Studio
c) Heck
d) KStudio

11) Which of the following operator is used to create integer sequences?

a) :
b) ;
c) -
d) ~

12) In R language, a vector is defined that it can only contain objects of the_____.

a) Same class
b) Different class
c) Similar class
d) Any class

13) How can we define 'undefined value' in R language?

a) Inf
b) Sup
c) Und
d) NaN

14) What will be the output of the following R code?

y<-c(TRUE, 2)

a) [1] "TRUE" "2"
b) [1] "TRUE" 2
c) [1] "0" "2"
d) [1] 1 2

15) How could be the matrix constructed by using the following R code?

a) row-wise
b) column-wise
c) any manner
d) data insufficient

16) If a command is not complete at the end of a line, R will give a different prompt, by default it is_____.

a) *
b) -
c) +
d) /

17) What are the typeof(x) and mode(x) in the following R syntax?
x<-1:3
a) Numeric, Integer
b) Integer, Numeric
c) Integer, Integer
d) Numeric, Numeric

18) How many atomic vector types does R have?
a) 5
b) 6
c) 8
d) 10

19) What is the meaning of "<-"?
a) Character
b) Numeric
c) Integer
d) Word

20) What will be the output of the following R function?
d<-date()
d
a) Prints todays date
b) Prints some date
c) Prints exact present time and date
d) Error

21) What will be the output of the following R function?
nchar()
a) no. of characters
b) first 5 characters
c) last 5 characters
d) Does not exist

22) Which of the following is used for generating sequences?
a) seq()
b) sequence()
c) order()
d) orderasc()

23) Which function is used to combine the elements in to a vector?
a) C()
b) D()
c) E()
d) F()

24) Decimal values are referred as _____ data types in R.
a) Numeric
b) Character
c) Integer
d) Lists

25) CUSUM control charts were originated in _____
a) 1950s
b) 1960s
c) 1920s
d) 1980s

26) What is the full form of the CUSUM control charts?
a) Curetted sum control charts
b) Corrected sum control charts
c) Compressive sum control charts
d) Cumulative sum control charts

27) Which charts are particularly more effective for sample size one?
a) p-charts
b) c-charts
c) X bar and s charts
d) CUSUM charts

28) Which of these is the use of the EWMA charts?
a) In time series modeling
b) In Real-time processing
c) In acceptance sampling
d) In designing of experiments

29) DPMO stands for _____
a) Defects per meter opportunities
b) Defects per million opportunities
c) Defects per month of opportunities
d) Defects per millimeter of opportunities

30) The purpose of Acceptance sampling is to _____
a) Define
b) Improvement
c) Measure
d) Control

31) Decision making regarding the lot disposition is sometimes called _____
a) Sentence lots
b) Estimate lot quality
c) Estimate lot defectives
d) Estimate lot conformity

32) Which of these is not used in sampling?
a) 0% inspection
b) 100% inspection
c) Acceptance sampling
d) 5% inspection

33) In double sampling plan, if the numbers of defects is in between the two cut off numbers C_1 and C_2 then _____
a) Accept the lot
b) Reject the lot
c) Take another sample
d) None of these

34) Costs of failure includes _____
a) Monitoring and control
b) Quality planning
c) Rejection and rework
d) All of the above

35) Which of the following is not a sampling plan?
a) Single sampling plan
b) Double sampling plan
c) Triple sampling plan
d) Sequential sampling plan

36) Lot tolerance percent defective (LTPD) is a level of lot quality specified by the_____.
a) Consumer
b) Producer
c) Supplier
d) Sampling Plan

37) In double sampling plan _____.
a) Maximum one sample is taken
b) Maximum two sample is taken
c) Maximum three sample is taken
d) None of these

38) How many sampling plans are there in the case of acceptance sampling?
a) 1
b) 2
c) 3
d) 5

39) Pareto analysis is also known by _____
a) Benchmarking
b) Demand forecasting
c) 80/20 rule
d) Job Scheduling

40) _____ is a picture of a process that shows the sequence of steps performed.
a) Flowchart
b) Cause and effect diagram
c) Pareto diagram
d) Histogram

Long Answer Questions. (15)

1) Write the advantages and disadvantages of R-Programming.
2) Write names of Key words in R-programming and explain any three of them with examples.
3) What is data structure? Explain vector and matrix data structure in R-programming.
4) Define operators. Explain arithmetic and relational operators in R-Programming.
5) Define flow chart in R-programming. Write its advantages and disadvantages.
6) Explain If statement with Syntax in R-programming and draw its flow chart.
7) What is for loop in R-programming? Write is Syntax and Draw flow chart.
8) Write Algorithm and R-programme to check leap year.
9) Define term quality and explain dimensions of quality.
10) What are the magnificent tools of quality? Explain Check sheet and scatter diagram.
11) What is CUSUM chart? Write algorithm of CUSUM chart for monitoring process mean.
12) Discuss moving average control chart and derive its control limits.
13) Discuss Six-Sigma methodology and derive control limits for Six-Sigma.
14) Describe Single sampling plan with determination of Consumer's risk, produce's risk, AOQ, ASN and ATI.
15) Describe double sampling plan with determination of ASN, AOQ and ATI.

Short Answer Questions (30)

1) Define variable. Explain three ways of variable assignment**.**
2) Discuss the applications of R-programming.
3) Write R-programme to find greatest of three numbers.
4) Give the rules for nomenclature of R Variables.
5) What are constants? Explain character constants.
6) Write R-programme to check if number is odd or even.
7) Define numerical constants and give its types.
8) Write R-programme to reverse a given number.
9) Discuss logical operators with example.
10) Write a note on increasing and decreasing operators.
11) Write a note on algorithm of R-programme.
12) What are the characteristics of an algorithm?
13) Write R-programme to check whether the given integer is positive or negative.
14) Define Data Frame and write any four data frame functions in R-Programming.
15) Write R-programme to find Prime numbers in a given range.
16) Write R-programme to find sum of first n natural numbers.
17) Write note on quality philosophy.
18) Explain Deming's PDCA cycle and its applications.
19) Discuss Pareto diagram and Pareto principle.
20) Explain cause and effect diagram and state its uses.
21) Explain Flow chart and state its benefits.
22) Define the terms: (i) Specification limits (ii) Process Capacity ratio.
23) Explain DMAIC methodology.
24) Write note on (i) 100% inspection (ii) Sampling inspection.
25) Discuss acceptance sampling inspection plan for attribute.
26) Discuss use of Type A and Type B Operating Characteristic (OC) curve in product control.
27) Explain exponentially weighted moving average charts for monitoring process mean.
28) Define the terms: (i) Acceptable quality level (AQL)
(ii) Lot tolerance percent defective (LTPD).
29) Discuss Consumer's risk and Producer's risk.
30) Explain average amount of total inspection (ATI) and Average sample number (ASN).

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