

BACHELOR OF VOCATION
Tool and Die Manufacturing
Subject: Statistical Quality Control
Subject Code: CBSC-110
Semester: Fifth
January 2021
Theory (External): 70 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 2 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 10 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number										

SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)

(10x2=20 Marks)

- A The quality of the product means:
- a) Degree of brightness
 - b) Fitness for use
 - c) Degree of perfection at any cost
 - d) Fitness for use at minimum cost
- B Quality function is the responsibility of:
- a) Production department
 - b) Quality control department
 - c) Inspection department
 - d) Everybody working in the organization
- C Use of statistical techniques to industrial products is helpful in
- a) Judging conformance or non conformance of the products
 - b) Improving quality standards
 - c) Maintaining quality standards
 - d) Maintaining and improving quality standards
- D The maximum percent defective that the consumers finds definitely acceptable is called:
- a) AOQL
 - b) LTPD
 - c) AQL
 - d) AOQ
- E In any sampling plan if 'C' is the acceptance number then the rejection number is
- a) 1-C
 - b) C+1
 - c) C-1
 - d) C²

F The control chart for number defects per sample is:

- a) P chart
- b) NP chart
- c) C chart
- d) U chart

G The OC curve is divided into three regions namely:

- (i)
- (ii)
- (iii)

H When a decision on acceptance or rejection is made on the basis of a single sample drawn from a lot, the acceptance plan is called as.....:

I In a normal distribution curve.....% area is included in between $\pm 3\sigma$ limits.

In a normal distribution curve.....% area is included in between $\pm 2\sigma$ limits.

JCharts provides the management with useful record of quality history.

SECTION -B (ESSAY TYPE QUESTIONS)

(5x10=50Marks)

- Q1 Define the term "Quality control". Explain its advantages over inspection techniques.
- Q2 Define briefly the ISO:9000 series standards in general.
- Q3 Define statistical process control. How process can be improved and variability can be reduced by SPC.
- Q4 A random sample of 100 items is taken from a lot of 10,000 items that is 10% defective. What is the probability of getting 5 or less defective units in the samples? Compare results of binomial distribution and poisson approximations.
- Q5 (a) Explain the general characteristics of a poisson distribution.
(b) How do the Binomial and Poisson distributions differ.
- Q6 Draw a neat sketch of an OC curve showing its different zones. Explain the characteristics of its curve.
- Q7 Differentiate between AQL and AOQL.
- Q8 (a) What is the difference between a defect and defective?
(b) Outline the theory underlying control chart for defect.

*******END OF THE PAPER*******