(d) Product differentiation

(e) Product branding

(f) Marketing channel

(g) Public relations

(h) Web marketing

SECTION – B

UNIT – I

2. "Marketing begins before production and continues even after transaction." In the light of this statement discuss the nature and scope of marketing.

3. What is marketing information system ? How does it help marketing people in decision making ?

UNIT – II

4. What is business buying behavior ? Who are the participants in business buying process ? Enumerate various stages of buying decision process in business markets.

5. What do you mean by market segmentation ? Discuss the bases used for segmenting the market taking suitable examples.

UNIT – III

6. (a) What do you understand by product mix ? Explain in brief.

(b) Discuss the role of packaging in market development, with suitable examples.

7. Explain the various methods of pricing. What are the factors to be considered before setting of prices ?

UNIT – IV

8. 'Advertisement and Sales Promotions are inevitable in marketing' - evaluate with example.

9. What do you mean by controlling the marketing efforts ? Discuss various types of controls used by business organization.

Section-D

8. (a) The sales in a super market during a week are given below. Test the hypothesis that the sales do not depend on the day of the week at 5% level of significance :

Days	:	Mon	Tues	Wed	Thus	Fri	Sat
Sales (in 1000 Rs.)	:	65	54	60	56	71	84

(b) A sample of 18 items has a mean 24 units and standard deviation 3 units. Test the hypothesis that it is a random sample from a normal population with mean 27 units.

9. Using dual simplex method

Maximize $z = -3x_1 - 2x_2$

Subject to $x_1 + x_2 \geq 1$,

$x_1 + x_2 \leq 7$,

$x_1 + 2x_2 \geq 10$,

$x_2 \leq 3$,

$x_1, x_2 \geq 0$

[Graph Paper]

B.Tech. 4th Semester F-Scheme

(Common for All Branches) Examination,

May-2019

MATHEMATICS-III

Paper-Math-201-F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt **five** questions in total selecting **one** question from each section. **Question No. 1 is compulsory**.*

1. (a) Find the value of a_n in the Fourier series of $f(x) = x - x^2$ from $x = -\pi$ to $x = \pi$,

(b) Separate into real and imaginary parts Log (4+3i).

(c) Define residue. Write statement of Cauchy's residue theorem.

(d) Solve the following LPP graphically :

Minimize $Z = 3x + 2y$

subject to the constraints

$5x + y \geq 10$, $x + y \geq 6$, $x + 4y \geq 12$, $x, y \geq 0$.

Section-A

2. (a) Find the Fourier serial expansion for :

$$f(x) = \begin{cases} -\pi, & -\pi < x < 0 \\ x, & 0 < x < \pi \end{cases}$$

hence deduce that $\frac{1}{1^2} + \frac{1}{3^2} + \frac{1}{5^2} + --- = \frac{\pi^2}{8}$.