# Sanjay Ghodawat University, Kolhapur

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

2020-21

EXM/P/09/00

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| **Year and Program: 2020-21** | **School of Commerce and Management** | **Department : B.Com** |
| **Course Code: CBC 104R02** | **Course Title:** **Business Mathematics and Statistics** | **Semester : II** |
| **Day and Date:** **Tuesday,27.07.2021** | **End Semester Examination** | **Time : 2 Hrs.** **Max Marks : 50** |

**Instructions**: 1) All Questions are compulsory.
2) Assume necessary data wherever required.

| **Q.1** | **Answer the following (any Two)** | **Marks** | **Bloom's Level** | **CO** |
|---|---|---|---|---|
| a) | **i.) Write the negation of the following statements :** | 8 | L1 | CO1 |

(a) $p$ : All triangles are equilateral triangles.

(b) $q$ : 9 is a multiple of 4.

**ii.) Write the truth value of the negation of each of the following statements:**

(i) $p$ : Every square is a rectangle.

(ii) $q$ : The earth is a star.

b) Calculate Average Due date from the following information: 8 L2 CO1

| Date of sales | Period of bill | Amount of bill |
|---|---|---|
| 13/1/2019 | 3 months | 20000 |
| 15/2/2019 | 3 months | 25000 |
| 17/2/2019 | 2 months | 40000 |
| 18/3/2019 | 2 months | 30000 |
| 10/4/2019 | 2 months | 35000 |
| | **Total** | **150000** |

c) i. The numbers 14, 16, 35,x are in proportion. Find out the fourth term for which they will be in proportion. 8 L2 CO2

ii. If (2x+3y):(3x+5y ) =18:29 find the value of x:y

**Q.2 Answer the following (any two)**

a) The following data shows the expenditure on various heads of the in monthly production for a manufacturing company. Represent the data by pie diagram. Values are in'000. — 8 — L3 — CO3

| Head | Expenses |
|---|---|
| Raw material | 45 |
| Labor | 30 |
| Over heads | 15 |
| Electricity | 30 |
| Miscellaneous | 30 |

b) Mr. Ketan is in the process of market research about his new product, in the regards suggests the appropriate data collection method and its advantages to Mr. Anil to get accurate feedback as compare to other methods of data collection. — 8 — L2 — CO3

c) The following frequency distribution shows the number of product sold in a month and their price in Rs. which attached to the product. From the following data draw Histogram & Frequency polygon. Draw the conclusion from the chart. — 8 — L4 — CO3

| **Prices ('00)** | 0 - 20 | 20 - 40 | 40 - 60 | 60 - 80 | 80 - 100 | 100 - 120 | 120 - 140 | 140 - 160 |
|---|---|---|---|---|---|---|---|---|
| **Number of Products** | 12 | 17 | 26 | 35 | 24 | 19 | 14 | 10 |

**Q.3 Answer the following (any two)**

a) Following are the Marks obtained by the 122 employees in the examination taken after providing training find the average Mark of the group. — 9 — L3 — CO3

| **Marks** | 100 - 110 | 110 - 120 | 120 - 130 | 130 - 140 | 140 - 150 | 150 - 160 | 160 - 170 | 170 - 180 |
|---|---|---|---|---|---|---|---|---|
| **Number of Students** | 4 | 6 | 20 | 32 | 33 | 17 | 8 | 2 |

b) Compute the Coefficient Of Quartile Deviation of the following data representing the number of shops opened and investment done by the company in lakhs. — 9 — L4 — CO4

| **Investment** | 4 - 8 | 8 - 12 | 12 - 16 | 16 - 20 | 20 - 24 | 24 - 28 | 28 - 32 | 32 - 36 | 36 - 40 |
|---|---|---|---|---|---|---|---|---|---|
| **Number of Shops** | 6 | 10 | 18 | 30 | 15 | 12 | 10 | 6 | 2 |

c) Following data represents number of people affected from a mysterious disease in a month from a city. Find the Standard deviation. 9 L4 CO4

| **Age group In years** | 5 - 10 | 10 - 15 | 15 - 20 | 20 - 25 | 25 - 30 | 30 - 35 | 35 - 40 | 40 - 45 |
|---|---|---|---|---|---|---|---|---|
| **Number of Persons** | 6 | 5 | 15 | 10 | 5 | 4 | 3 | 2 |