GSCN/W-2018/ BBASFC 1.0

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## GSCN/W-2018 G. S. College of Commerce & Economics, Nagpur

An Autonomous Institution

(Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

First Semester Bachelor of Business Administration Examination (CBCS)

BUSINESS MATHEMATICS AND STATISTICS

## (BBASFC 1.0)

Time: 3 Hours

Maximum Marks: 80

N.B. : 1) All questions are compulsory.

2) Draw well-labelled diagrams wherever necessary.

Q.1 (A) Present the following data of percentage marks of 60 students in the form of frequency table with ten classes of equal width, one class being 40-49:

| 41 | 17 | 33 | 63 | 54    | 92 | 60 | 58 |
|----|----|----|----|-------|----|----|----|
| 70 | 06 | 67 | 82 | 33    | 44 | 57 | 49 |
| 34 | 73 | 54 | 63 | 36    | 52 | 32 | 75 |
| 60 | 33 | 09 | 79 | 28    | 30 | 42 | 93 |
| 43 | 80 | 03 | 32 | 57    | 67 | 24 | 64 |
| 63 | 11 | 35 | 82 | 10    | 23 | 00 | 41 |
| 60 | 32 | 72 | 53 | 92    | 88 | 62 | 55 |
| 60 | 33 | 40 | 57 | in Vi | AN |    |    |
|    |    |    |    | DR    |    |    |    |

(B) Prepare an ordinary frequency table from the following table and then convert it into "More than cumulative frequency table":

|             | Class Int  | erval  | F     | requency                         |       |
|-------------|--|--------|-------|----------------------------------|-------|
|             | Below 10<br>Below 20<br>Below 30<br>Below 40<br>Below 50<br>Below 60 |        | पुर   | 17<br>22<br>29<br>37<br>50<br>60 |       |
| Q.2 (A)     |  |        | TL    |                                  |       |
| Class:      | 1-8  | 9-16 🦾 | 17-24 | 25-32                            | 33-40 |
|             | 41-48  | 49-56  | 57-64 | 65-72                            | 73-80 |
| Frequency : | 2,   | 4,     | 7,    | 13,                              | 18,   |
|             | 24.  | 17     | 9     | 5                                | 1     |

Compute the mean and mode in the above distribution.

OR

(B) Find out the Karl Pearson's co-efficient of Skewness based on mode from the following data.
Share Performent 1200 and 1400 and 1600 and 1800 and 2000 and

| Class  | Below : | 1200, | 1400, | 1600, | 1800, | 2000, | 2200, | 2400, | 2600 |
|--------|---------|-------|-------|-------|-------|-------|-------|-------|------|
| Freque | ency:   | 5,    | 15,   | 28,   | 42,   | 242,  | 290,  | 320,  | 350  |

Q.3 (A) From the following table, calculate the Karl Pearson's co-efficient of Correlation Between age of Husbands and Wives:

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|  |                               | Age o          | f Husban     | ds (Yea  | ars)     |        |                   |        |          |            |    |
|--|-------------------------------|----------------|--------------|----------|----------|--------|-------------------|--------|----------|------------|----|
| Age of Wives   | 20-30                         | 30-40          | 40-50        |          | 50-6     | 0      | 6                 | 60-70  |          | Total      |    |
| (Years)  |                               |                |              |          |          |        |                   |        |          |            |    |
| 55-65  |                               |                |              |          | 4        |        |                   | 2      |          | 6          |    |
| 45-55  |                               |                | 4            |          | 16       |        |                   | 5      |          | 25         |    |
| 35-45  |                               | 1              | 12           |          | 2        |        |                   |        |          | 15         |    |
| 25-35  |                               | 10             | 25           |          | 2        |        |                   |        |          | 37         |    |
| 15-25  | 5                             | 9              | 3            |          |          |        |                   |        |          | 17         |    |
| Total  | 5                             | 20             | 44           |          | 24       |        |                   | 7      |          | 100        |    |
|  |                               |                | OR           |          |          |        |                   |        |          |            | 10 |
| (B) From the   | following da                  | ta calculate:  |              |          |          |        |                   |        |          |            |    |
| (i) Two R  | egression Co                  | -efficients    |              |          |          |        |                   |        |          |            |    |
|  | Logression Ec                 | viotions.      |              |          |          |        |                   |        |          |            |    |
|  | Legression Eq                 | luations.      |              |          |          |        |                   |        |          |            |    |
| (111) Co-ef  | ficient of Co                 | rrelation and  | l interpret  | lt.      |          |        |                   |        |          |            |    |
| Age o  | of Husbands:                  | 18 19          | 20 21        | 22       | 23       | 24     | 25                | 26     | 27       |            |    |
| Age  | of Wives ·                    | 14 16          | 16 18        | 18       | 19       | 20     | 20                | 21     | 21       |            |    |
| 1160 (   |                               | 11 10          | 10 10        | 10       | 1        | 20     | 20                | 21     | 21       |            |    |
| $O_4(A)$ Find out                                    | Simple Intere                 | est on an am   | ount Rs 2    | 1000 at  | nd Co    | mpou   | ind Int           | erest  | on Rs    | 50,000     | 10 |
| Eor 24 m   | onths at 9% r                 |                | ount 1(5, 2  | 1000 a   |          | inpou  |                   | erest  |          |            | 10 |
| 1012411  |                               | ,.a.           | OP           | 0        | 10       | XX     | $\langle \rangle$ |        |          |            |    |
| $(\mathbf{D}) \wedge \mathbf{D}_{amon}$              | donates 20/                   | of his in som  | OK and anot  | da 000   | ( of h   |        |                   | n hia  | family   | If         |    |
| (B) A Person   | donates 5%                    | of his incom   | ie and sper  | ids 90%  | % OI III | is inc | ome c             | on mis | Tamity   | y. 11 a    |    |
| Balance  | DI KS. 1750 IS                | with him, I    | ind out his  | incom    | le.      | 10     | 4 1               |        |          |            |    |
|  |                               | - 1            | 2            |          | 111      | 12     | 3                 |        |          |            | 00 |
| Q.5 Answer the f                                     | ollowing que                  | stions in abc  | out 75-100   | words.   | . (Any   | Two    |                   |        |          |            | 08 |
| (A) Define St  | atis <mark>t</mark> ics and n | nention any    | 4 limitatio  | ns of S  | tatistic | cs.    | 16                |        |          |            |    |
| (B) What are   | the types of a                | classification | n of Data?   | 7/       | 31       | 1 2    | 4 r               |        |          |            |    |
| (C) What do  | you mean by                   | primary data   | a? Mention   | n any 4  | sourc    | es foi | r colle           | ction  | of prin  | mary data. |    |
|  |                               | ENV            | 1            |          | \$N      | 2      | 6                 |        |          |            |    |
| Q.6 Answer the fe                                    | ollowing que                  | stions in abc  | out 75-100   | words.   | . (Any   | Two    |                   |        |          |            | 08 |
| (A) Enumera  | te the import                 | ant character  | ristics of a | good r   | neasu    | re of  | Centra            | al Ter | dency    | ·          |    |
| (B) What are   | the objective                 | s and functi   | ons of Stat  | istical  | Avera    | ges?   |                   |        | 2        |            |    |
| (C) What do  | vou understa                  | nd by Dispe    | rsion? Wh    | at are t | he pro   | nertie | es of a           | n ide  | al mea   | sure of    |    |
| Dispersio  | you understa                  | nd by Dispe    |              |          | ne pro   | perti  | 05 01 0           | in nuc | ui illeu |            |    |
| Dispersio  | ·11 .                         |                |              |          |          |        |                   |        |          |            | 08 |
| 0.7 Answer the f                                     | ollowing aug                  | stions in abc  | Nut 75 100   | worde    | (Any     | Two    | )                 |        |          |            | 00 |
| Q.7 Allswel the f                                    | onowing que                   |                | out 75-100   | worus.   | . (Ally  | Iwo    | )                 |        |          |            |    |
| (A) Explain the $(\mathbf{P})$ $\mathbf{W}^{\prime}$ | he meaning a                  | nd significat  | ice of Cor   | relation | l.       | c      |                   |        |          |            |    |
| (B) What is re                                       | egression ana                 | lysis? State   | the applica  | ition or | utility  | y of r | egress            | ion a  | nalysis  | 5.         |    |
| (C) Differenti                                       | ate between (                 | Correlation a  | and Regres   | sion.    |          |        |                   |        |          |            |    |
| $O^{Q}$ A new on the f                               |                               | ations in she  | wt 75 100    | mondo    | ( 1      | Ture   | `                 |        |          |            | 08 |
| 2.8 Answer the 10                                    | onowing que                   |                | m 1 ·        | words    | . (Any   |        | )                 |        |          |            | 00 |
| (A) What do  | you mean by                   | Quantitativ    | e Techniqi   | ies? Gi  | ive its  | Class  | sificat           | ion.   |          |            |    |
| (B) Explain t  | he role of Qu                 | antitative Te  | echniques    | in Busi  | ness a   | nd In  | dustry            | y.     |          |            |    |
| (C) What are   | the limitation                | ns of Quanti   | tative Tecl  | nniques  | s?       |        |                   |        |          |            |    |
| 0.9 Answer the f                                     | following and                 | stions in ab   | out 3-4 ser  | itences  | •        |        |                   |        |          |            | 08 |
| (A) What do  | vou mean hy                   | Secondary      | Data?        | nences   | •        |        |                   |        |          |            |    |
| $(\mathbf{R})$ Give the                              | formula for a                 | alculating D   | owlay's C    | o offic  | iont of  | f Skar | whoee             |        |          |            |    |
| $(\mathbf{D})$ Give the                              | tornula for c                 | alculating B   | owley s C    |          | o o      | эке    | wness             | •      |          |            |    |
| (C) What is t  | ne range of th                |                | ent of Corr  | elation  |          |        |                   |        |          |            |    |
| (D) Write an   | y two charact                 | eristics of R  | at10.        |          |          |        |                   |        |          |            |    |
|  |                               |                |              |          |          |        |                   |        |          |            |    |