TRIBHUVAN UNIVERSITY

2078 (Partial) / 2079 (Regular)

B.B.S. 4 Yrs. Programme / I Year / MGMT

MGT 202 : (Business Statistics) Full Marks: 100

(New Course) Time: 3 hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Group "A"

Brief Answer Questions [10×2=20]

Attempt ALL questions.

1. If mean = 35, mode = 40 and standard deviation = 10. Find Karl Pearson's coefficient of skewness and interpret the result.

2. Find Karl Pearson's correlation coefficient between X and Y from the following information.
   $N = 10$, $\Sigma X = 125$, $\Sigma Y = 50$, $\Sigma X^2 = 2080$, $\Sigma Y^2 = 2085$, $\Sigma XY = 1050$

3. The standard deviation of mesokurtic distribution is 7. What must be the value of fourth moment about mean?

4. Ram and Sita appear for an interview for two different posts. The probabilities of their selection are 3/4 and 1/5 respectively. Find the probability that (a) both of them will be selected (b) none of them will be selected.

5. The year of origin of the following trend line equation of sales (in millions rupees) is 2015.
   $Y = 50 + 2.5X$
   Estimate the sales for the year 2022.

6. The following table shows the monthly income of workers of two manufacturing companies A and B

	Company A	Company B
Mean-monthly income	Rs. 2550	Rs. 2800
Number of workers	100	110

Find the combine mean of monthly income of workers of both companies.

7. Find simple aggregative price index number for the year 2021 from the following information.

Commodities	A	B	C	D	E	F
Price in 2020 (Rs.)	160	140	150	130	155	120
Price in 2021 (Rs.)	170	135	155	140	150	30

8. . Find $7(A+B)$ where $A=\begin{bmatrix}1 & 2 & 5\\ 2 & 1 & 3\\ 3 & 3 & 2\end{bmatrix}$ and $B=\begin{bmatrix}3 & 1 & 5\\ 2 & 5 & 1\\ 1 & 3 & 2\end{bmatrix}$

9. Find the value of determinant of following matrix:

$$\begin{bmatrix}1 & 2 & 3\\ 2 & 5 & 1\\ 9 & 3 & 2\end{bmatrix}$$

10. What is chronological classification? Give an example.

Group "B"

Descriptive Answer Questions [5×10=50]
Attempt any FIVE questions.

11. The marks distribution of 100 students of a College is as follows:

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Students	8	16	25	22	15	9	5

Determine the limits of marks of middle 80% students.

12. An enquiry into the budget of middle class families in a certain locality of a city gave the following information:

Expenses on	Food	Rent	Clothing	Fuel	Misc.
	30%	15%	20%	10%	25%
Price in 2021 (Rs.)	160	60	110	30	80
Prices in 2022 (Rs.)	184	70	135	55	100

What is the cost of living index number of 2022 as compared to 2021? If an employee's monthly salary is Rs. 40,500 in base period what should be his/her salary in current period?

13. Solve the following linear programming problem:

Minimize $Z = 2x + 3y$
Subject to Constraint :

$$5x + y \geq 10$$
$$2x + 2y \geq 12$$
$$x + 4y \geq 12$$
$$x \& y \geq 0$$

14. (a) From the given Pay-off table, give the decision according to (i) Maximax approach (ii) Maximin approach (iii) Minimax Regret approach.

P.T.O.