



OFFICE OF THE DEPUTY VICE CHANCELLOR  
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

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## UNIVERSITY EXAMINATIONS

### 2025 /2026 ACADEMIC YEAR

1<sup>ST</sup> YEAR 1<sup>ST</sup> SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF  
COMMUNICATION AND PUBLIC RELATIONS  
(CPR)

COURSE CODE: HRD 101

COURSE TITLE: QUANTITATIVE SKILLS

DATE:9/12/2025

TIME: 2.00 TO 5.00 P.M

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#### INSTRUCTION TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES PLEASE TURN OVER

MAIN EXAM

IRD 101: QUANTITATIVE SKILLS

STREAM: CPR

DURATION: 3 Hours

INSTRUCTIONS TO CANDIDATES

- i. Answer Question *ONE* and any other *TWO* questions.
- ii. Maps and diagrams should be used whenever they serve to illustrate the answer.
- iii. Do not write on the question paper.

**QUESTION ONE (30 MARKS)**

- a) The following table contains the data on train arrival and train departure from a station. Study the table and answer the questions that follow:

| Delay (mins) | No. of Arrivals | No. of Departures |
|--------------|-----------------|-------------------|
| 0            | 1250            | 1400              |
| 0- 30        | 114             | 82                |
| 30- 60       | 31              | 5                 |
| >60          | 5               | 3                 |
| Total        | 1400            | 1490              |

Required:

- i) Find the number of trains that arrived late (3 marks)
- ii) Find the number of trains that departed late (3 marks)
- iii) Find the percentage of trains that arrived late (3 marks)

- b) A company conducted a survey of 500 customers to determine their satisfaction with the company's products. The results showed that 80% of customers were satisfied with the products. Of the satisfied customers, 60% were repeat customers.

Required:

- i) How many satisfied customers were repeat customers? (3 marks)

- ii) Calculate the number of dissatisfied customers. (3 marks)
- iii) Find the percentage of dissatisfied customers in relation to the satisfied customers. (3 marks)
- c) A teacher recorded the following test scores for his class:  
[85, 78, 92, 88, 84, 90, 79, 81, 87, 93, 78, 84].

Required:

- i) Calculate the mean score. (4 marks)
- ii) Determine the median score (4 marks)
- iii) Identify the mode(s) if any. (4 marks)

**QUESTION TWO (20 MARKS)**

- a) Study the table below and answer the questions that follow:

|   |   |   |    |    |    |    |    |
|---|---|---|----|----|----|----|----|
| X | 1 | 2 | 3  | 4  | 5  | 6  | 7  |
| Y | 9 | 8 | 10 | 12 | 11 | 13 | 14 |

**Required**

- i) The regression coefficient of X on Y. (8 marks)
- ii) The regression equation for X on Y (4 marks)
- iii) The regression equation for Y on X (4 marks)
- b) Explain the effects of outliers in a distribution (4 marks)

**QUESTION THREE (20 MARKS)**

- a) You are given the following regression equations:

$$2Y - X - 50 = 0$$

$$3Y - 2X - 10 = 0.$$

Required:

- i) Find the mean values of X and Y (10 marks)

- ii) Determine the coefficient of correlation between X and Y (10 marks)

**QUESTION FOUR (20 MARKS)**

- a) You are given the following information on workers and their incomes in a firm:

|                   |         |         |         |         |         |
|-------------------|---------|---------|---------|---------|---------|
| Income            | 400-450 | 450-500 | 500-550 | 550-600 | 600-650 |
| Number of workers | 8       | 12      | 30      | 21      | 6       |

Required

- i) Find the range within the data set (3 marks)  
ii) Explain the significance of the above range (3 marks)

- b) The marks of 5 students are given as follows:

20, 25, 30, 35, 80.

Required:

- i) The mean score (2 marks)  
ii) The median score (2 marks)  
iii) The skewness of the scores (2 marks)

- c) Given a data set:

2,3,5,7,10.

Find the skewness (3 marks)

- d) Explain what is meant by kurtosis giving three types of kurtosis (5 marks)

**QUESTION FIVE (20 MARKS)**

- a) Explain the significance of the variance and standard deviation in a data set (5 marks)

b) A teacher asked the students to complete 60 pages of a record note book. Eight students have completed only 32, 35, 37, 30, 33, 36, 35 and 37 pages.

Required:

- i) Find the mean number of pages completed. (4 marks)
- ii) Find the standard deviation of the pages yet to be completed by them. (8 marks)
- iii) Interpret your answer in (ii) above ( 3 marks)