

## IM.B.A. (PHM) (Rep) Sem.-3 Examination

PHM-BBA - CC-301

FoS - I

Time : 2-30 Hours]

November-2025

[Max. Marks : 70

- Instructions :** (1) This paper contains **FIVE** questions.  
 (2) All questions are compulsory.  
 (3) Question No.2, 3, 4 have internal options.  
 (4) Figures in the right side in parenthesis indicate marks.

- Q:1 (A)** The frequency distribution of number of cheques received per day for clearing of 5 branches of a bank on 100 days in the year 2014 is as follows. Find the coefficient of skewness by Bowley's method using this distribution. **(07)**

No. of cheques	0-199	200-399	400-599	600-799	800-999
No. of days	10	13	17	42	18

- (B)** What are the different types of data? Discuss each type in detail. **(07)**
- Q:2 (A)** For a frequency distribution of monthly overtime of employees of a company, the difference between the two extreme quartiles is 50 and their sum is 218. If the median is 112, find the coefficient of skewness. **(07)**
- (B)** The number of cold drink bottles sold by a shopkeeper on different days is shown in the following table. Find the mode for the number of cold drinks bottles sold. **(07)**

No. of bottles	0-3	4-7	8-11	12-15	16-19	20-23
No. of days	3	11	16	20	18	12

OR

- Q:2 (A)** Discuss in detail Simple Random Sampling and Stratified Sampling. **(07)**
- (B)** The information of number of mobiles phones sold in last 35 days in a mobile shop is given below. Find the coefficient of standard deviation of number of mobile phones sold. **(07)**

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No. of mobile phones sold.	5	6	7	8	9	10
No. of days	2	5	8	12	7	1

**Q:3 (A)** Difference between discrete frequency distribution and continuous frequency distribution (07)

**(B)** From the data given below, obtain original frequency distribution. (07)

<b>Mid value</b>	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5
<b>Frequency</b>	12	18	16	22	14	10	6	2

**OR**

**Q:3 (A)** Area of 5 different regions is as under. Draw a pie diagram. (07)

Region	A	B	C	D	E
Area	5	8	29	44	71

**(B)** There were 1250 skilled and 400 unskilled workers in a private company in the year 2011. There were 220 female workers and of them, 140 were unskilled. In the year 2012, the number of skilled worker was 1475 and of them, 1300 were males. Out of 250 unskilled workers, 200 were males. In 2013, there were 1700 skilled and 50 unskilled workers. Out of total workers, 250 were females of them 240 were skilled. In the year 2014, there were 2000 workers and of them, 2% were unskilled. Out of the total workers, 300 were females and of them, 10 were unskilled. Present the above data in the form of table. (07)

**Q:4 (A)** Two aircrafts drop bomb to destroy a bridge. The probability that a bomb dropped from the first aircraft hits the target is 0.9 and the probability that a bomb from the second aircraft hits the target is 0.7. The probability of one bomb dropped from both the aircrafts hitting the target is 0.63. The bridge is destroyed even if one bomb drops on it. Find the probability that the bridge is destroyed. (07)

**(B)** A random variable X denotes the number of accidents per year in a factory and the probability distribution of X is given below : (07)

X=x	0	1	2	3	4
P(x)	4K	15K	25K	5K	K

- I. Find the constant K and rewrite the probability distribution.
- II. Find the probability of the event that one or two accidents will occur in this factory during this year.
- III. Find the probability that no accidents will take place during the year in the factory

**OR**

**Q:4 (A)** Differentiate between Binomial, Hypergeometric, and Poisson distributions. (07)

**(B)** Define Hyper geometric distribution and state its properties. (07)

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**Q:5 (A)** Define binomial distribution and state its properties. **(07)**

**(B)** Answer the following question. **(07)**

- i. Give two examples of continuous variable.
- ii. Define discrete variable.
- iii. State the empirical relation between mean, median, mode.
- iv. Seven students of a group get 20, 20, 20, 20, 20, 20, 20 marks in a test of 45 marks. What is the standard deviation of their marks?
- v. State the relation between mean and variance of binomial distribution.
- vi. What is the probability of having 5 Thursdays in the month of February in a year which is not a leap year?
- vii. If one number is randomly selected between 1 to 20, what is the probability that the number is a multiple of 6?

