**GLOBAL COLLEGE INTERNATIONAL**

**MID-TERM EXAMINATION – 2023**

**BACHELOR OF BUSINESS ADMINISTRATION-BBA**

**SEMESTER II**

**Subject: Business Statistics Course Code: MGT 422**

**Full Mark: 100 Time: 3.00 Hours**

*You are required to answer in your own words as far as applicable. The figures in the margin indicate full marks.*

**SECTION B: SHORT ANSWER QUESTIONS [8 x 5 = 40 MARKS]**

*Answer any EIGHT questions:*

Q1. What do you mean by statistics? Discuss its importance in business and industry.

Q2. Draw a pie chart representing the following data showing export of a garment company in 2022:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Country | Nepal | USA | UK | India | France | Total |
| Year 2022 | 30 | 45 | 25 | 30 | 60 | 190 |

Q3. The mean and standard deviation of 100 observation were found to be 20 and 3 respectively. After calculation were it was found that three of the observations were incorrect, which were recorded as 20, 22 and 18. Find the correct mean and standard deviation if the incorrect observations are omitted.

Q4. 100 students took a test. The result of those who secured less than 60% marks are given below.

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 – 20 | 20 – 40 | 40 - 60 |
| No. of students | 16 | 24 | 30 |

If the average mark of all students was 50, find the average marks of those who secured more than 60% marks.

Q5. You are given Mean = 50, C.V. = 40% and Karl Pearson’s coefficient of skewness ($S\_{K}$) = - 0.4, then find the standard deviation and mode.

Q6. What do you mean by exclusive event? In a group of 20 people, 5 people are graduates. If 3 people are chosen out of 20 at random, what is the probability that (i) all are graduates (ii) 1 is graduates and rest are others?

Q7. Mr. A and Mr. B both are interested to attend a seminar in Department of Management, TU. The chance of attending a seminar by Mr. A is 0.6 and that by Mr. B is 0.3. They both can also attend the seminar. What is the probability that:

1. At least any one of them will attend the seminar?
2. Only one of them will attend the seminar?
3. None of them will attend the seminar?

Q8. Coefficient of variance of two series are 75% and 90% and their standard deviation are 15 and 18 respectively. Find their means.

Q9. 120 students appeared in Unit test of GCI and the following marks distribution was obtained in Basic Mathematics.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 - 10 | 10 - 20 | 20 – 30 | 30 - 40 | 40 – 50 |
| No. of students | 20 | 25 | 31 | 30 | 14 |

 Determine the followings:

1. Number of the students getting more than 35 marks.
2. The number of students who fail, if 25 marks are required for passing

Q10. Compute the five number summary of the following data and comment about the shape of the distribution.

 12, 24, 30, 20, 25, 18, 35, 26, 16, 22, 28

**SECTION C: LONG ANSWER QUESTIONS [3 x 10 = 30 MARKS]**

*Answer any THREE questions:*

Q11. From the following table showing the marks distribution in a certain class.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 - 20 | 20 – 40 | 40 - 60 | 60 – 80 | 80 - 100 |
| No. of students | 12 | 18 | 36 | 24 | 10 |

 Determine:

1. The highest marks obtained by bottom 30S% of the students.
2. The lowest marks obtained by the top 30% students.
3. Limit of the marks for the middle 30% of the students.

Q12. From the data given below, State which team is more consistent?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. of goals scored in match | 0 | 1 | 2 | 3 | 4 |
| No. of match (team A) | 27 | 9 | 8 | 5 | 1 |
| No. of match (team B) | 1 | 5 | 8 | 9 | 27 |

Q13. The mean and standard deviation of 200 items are found to be 60 and 20 respectively. At the time of calculation, two items were wrongly taken as 3 and 67 instead of 13 and 17. Find the correct mean and correct standard deviation. What is the correct coefficient of variation?

Q14. (a) The probability that the man will be alive 25 years is $\frac{3}{5}$ and the probability that his wife will be alive 25 years is $\frac{2}{3}$ . Find the probability that:

1. Both will be alive
2. Only man will be alive
3. Only the wife will be alive
4. At least one will be alive
5. Only one of them will be alive 25 years hence
6. None will be alive, 25 years hence

(b) A bag contains 8 red, 5 white and 4 green balls. Three balls are drawn randomly. What is the probability that:

1. All red balls
2. 2 red and one white
3. 2red one other
4. All colour balls

Q15. The asset structure of listed and unlisted companies in Nepal is as follows:

|  |  |  |
| --- | --- | --- |
| Asset (Rs. In millions) | No. of listed companies | No. of unlisted companies |
| 0 – 5 | 20 | 20 |
| 5 – 10 | 25 | 30 |
| 10 – 15 | 50 | 40 |
| 15 – 20 | 40 | 50 |
| 20 – 25 | 20 | 20 |
| 25 – 30 | 15 | 10 |
| Total | 170 | 170 |

 Find the skewness of the asset distribution and make the comment on both listed and unlisted companies. Also comment on the consistency of the asset distribution between the companies.

**SECTION D: CASE STUDY [15 MARKS]**

Q16. In the U.T. Examination of Global College International, marks obtained in Mathematics by the students are as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| Sec ‘A’ |  | Sec ‘B’ |  |
| marks | No. of students | Marks | No. of students |
| 10 | 4 | 12 | 6 |
| 14 | 6 | 15 | 6 |
| 18 | 9 | 20 | 10 |
| 20 | 7 | 22 | 5 |
| 25 | 5 | 28 | 6 |
| 30 | 4 | 30 | 2 |

1. If the consistency of performance is the criteria for awarding a prize, which section should be awarded by the prize?
2. Which section students have better knowledge in mathematics?
3. Which section students are more intelligent?