B.M.S COLLEGE FOR WOMEN
BENGALURU – 560004

V SEMESTER END EXAMINATION – JAN/FEB- 2024

B.C.A. – DATA ANALYTICS
(NEP Scheme 2021-22 Onwards)

Course code: BCA5DSC14   **QP Code: 5046**
Duration: **2 ½ Hours**   **Max. Marks: 60**

Special Instruction: Z score table should be provided.

SECTION-A

Answer any TEN from the following.   **(10X2=20)**

1. Justify the statement "Visualisations are better to explain the reports".
2. Write any two applications of Data Analytics in the field of Health-care.
3. What are the measures of Central Tendency.
4. Define Random Variable? Mention its types
5. Formulate the hypothesis for the scenario – "The average weight of an Orange is 200gms".
6. What are the applications of Web Analytics?
7. Write any two salient features of Power BI.
8. During Amazon Exchange Mela - Estimating the value of a used phone is an example of which concept?
9. Differentiate Linear Regression and Logistic Regression
10. What is Dashboard?
11. Expand ANOVA. Mention any two assumptions required to use ANOVA.
12. Write the formula to find the conditional probability of an independent event.

SECTION-B

Answer any SIX from the following.   **(6X5=30)**

13. Explain the different types of Data Analytics with suitable example.
14. Write a note on Text Analytics and its application.
15. Die Another Day (DAD) hospital recruits its nurses frequently to manage high attrition among the nursing staff. Not all job offers from DAD hospital are accepted. Based on the past recruitment data, it was estimated that only 70% of the offers rolled out of DAD hospital are accepted.
    a) If 10 offers are made, what is the probability that more than 5 and less than 8 candidates will accept the offer from DAD hospital?
    b) During March 2024, DAD hospital requires 14 new nurses to manage the attrition.

What should be the number of offers made by DAD hospital, so that the average number of nurses accepting the offers is 14?

16. Find the probabilities of the following for the table below
    a) Playing Tennis
    b) Playing Tennis when Temperature is Mild or Hot
    c) Wind is Strong when No tennis is played.

Day	Outlook	Temperature	Humidity	Wind	PlayTennis
D1	Sunny	Hot	High	Weak	No
D2	Sunny	Hot	High	Strong	No
D3	Overcast	Hot	High	Weak	Yes
D4	Rain	Mild	High	Weak	Yes
D5	Rain	Cool	Normal	Weak	Yes
D6	Rain	Cool	Normal	Strong	No
D7	Overcast	Cool	Normal	Strong	Yes
D8	Sunny	Mild	High	Weak	No
D9	Sunny	Cool	Normal	Weak	Yes
D10	Rain	Mild	Normal	Weak	Yes
D11	Sunny	Mild	Normal	Strong	Yes
D12	Overcast	Mild	High	Strong	Yes
D13	Overcast	Hot	Normal	Weak	Yes
D14	Rain	Mild	High	Strong	No

17. The length of life of an instrument produced by a machine has a normal distribution with mean of 12 months and standard deviation of 2 months. Find the probability that an instrument produced by the machine will last
    a) less than 7 months
    b) between 7 and 12 months.

18. Explain Power BI Architecture.

19. Write a note on Visualization techniques used for Spatial, Geospatial Data and Time-Oriented Data

20. Write a short essay on Evolution of Data Analytics.

SECTION-C

Answer any ONE of the following   **(10X1=10)**

21. a) Describe the properties of Normal Distribution and Standard Normal Distribution
    b) What are the different types of t-tests and explain them.   **(6+4)**

22. Explain the implementation of any four visualizations in Microsoft Power BI.

23. a) Consider Amazon case study and explain the use of predictive analytics.
    b) Imagine you as a BI developer, how would you design the dashboard for COVID-19 for Government of Karnataka? Which visualizations will be considered for depicting the KPIs.

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