Seat No. : _____

DP-101

December-2025

MBA, Sem.-III

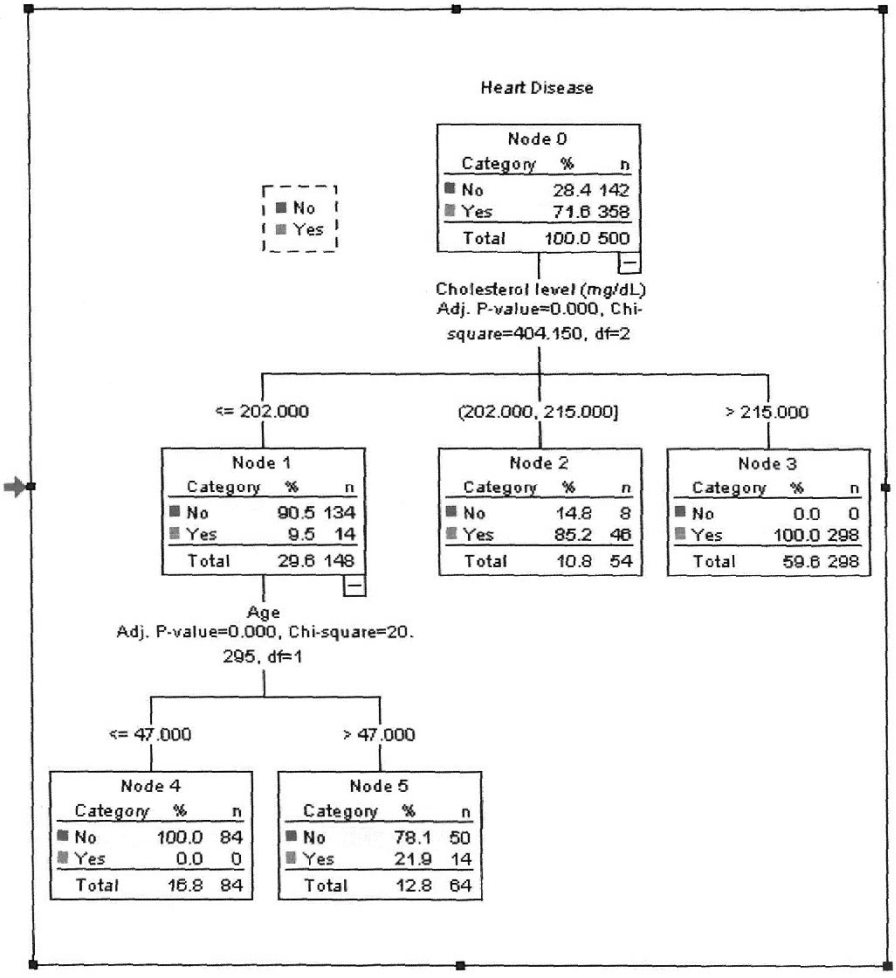
MBA in Public Policy Management (PP) / MBA in Event Management (EM) / MBA in Business Economics and Public Finance (BEPF)

BBA-304/PBA-304/EBA-304/DBA-304

Business Analytics for Managers (BAM)

Time : 2:30 Hours] **[Max. Marks : 70**

1. Following diagram depicts the heart disease and its assumed relation with cholesterol and age.



(A) Interpret the following tree diagram with respect to numbers **7**

(B) Summary/ recommendation in few lines. **7**

2.

(A) Interpret the above Dashboard in general for the companies of Uttarakhand. **7**

(B) Identify the top 5 businesses and calculate the approximate stake of private companies (in %). **7**

OR

2. (A) Correct the following R-codes **7**

```
patient_data <- data.frame (
    ID = c(101, 102, 103),
    Age = c(45, 50, 38),
    BP = c(130, 140, 125),
    Group = c("Control', "Treatment',"Control')
)
```

(B) Correct the following R-codes for the regression **7**

```
patient_data <- data.frame (
    Age = c(25, 35, 45, 55, 65),
    BP  = c(120, 126, 130, 138, 145)
)
model <- regression(BP ~ Age, data = patient_data)
summary(model)
```

3. Data regarding brand loyalty was collected from 30 customers =15 brand loyal+15 not. To understand the brand loyalty, attitude towards brand, shopping and product category were measured on 1 to 7 point scale (1 = unfavorable..... 7 favorable).

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Brand	1.274	.479	7.075	1	.008	3.575
	Product	.186	.322	.335	1	.563	1.205
	Shopping	.590	.491	1.442	1	.230	1.804
	Constant	–8.642	3.346	6.672	1	.010	.000

a. Variable(s) entered on step 1: Brand, Product, Shopping.

Classification Table[a]

Observed			Predicted		
			Loyalty to the Brand		Percentage Correct
			Not Loyal	Loyal	
Step 1	Loyalty to the Brand	Not Loyal	12	3	80.0
		Loyal	3	12	80.0
	Overall Percentage				80.0

a. The cut value is .500

(A) Write the model structure with list of Independent and dependent variables only. **7**

(B) Write the interpretation for the following Logistic regression output. **7**

OR

3. (A) How can web analytics be useful in pharma website ? **7**

(B) Write a short note on web analytics from the perspective of SEO. **7**

4. A leading mobile service provider firm wanted to know satisfaction level of their customers on various services.

They randomly selected 15 respondents and asked them to rate satisfaction on the following 5 services on 0 to 9 point scale.

- Customer care
- Network connectivity
- Roaming
- Value added service
- Std call charge

(A) Interpret the following Hierarchical cluster analysis. **7**

Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage	No. of clusters
	Cluster 1	Cluster 2		Cluster 1	Cluster 2		
1	1	15	2	0	0	3	14
2	6	10	3	0	0	9	13
3	1	8	3	1	0	10	12
4	11	14	5	0	0	7	11
5	5	12	5	0	0	10	10
6	2	13	8	0	0	11	9
7	3	11	8.5	0	4	13	8
8	4	9	10	0	0	11	7
9	6	7	17.5	2	0	12	6
10	1	5	24.17	3	5	13	5
11	2	4	28	6	8	12	4
12	2	6	50.5	11	9	14	3
13	1	3	107.5	10	7	14	2
14	1	2	121.2	13	12	0	1

(B) For the above what do you recommend ? If we want statistically confirmed results what is necessary (meaning which technique is useful ? **7**

OR

4. (A) Write the steps for hierarchical clustering analysis. **7**
   (B) Write the importance of Linear programming with your choice of examples. **7**

5. Hypothesised Model (assumed theory): I believe that People prefer to migrate in a state/ UTs where more MSMEs (micro small and medium enterprises), Companies are there.

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	9.9E+13	4.95E+13	49.29731	0.00
Residual	28	2.81E+13	1E+12		
Total	30	1.27E+14			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept (b0)	426261.7	227057.7	1.877328	0.07	-38844.9	891368.3
Total MSMEs (b1)	1.432304	0.545721	2.624606	0.01	0.314444	2.550164
Active Companies (b2)	22.81375	3.797093	6.008214	0.00	15.03576	30.59174

Regression Statistics	
Multiple R	0.882509
R Square	0.778822
Adjusted R Square	0.763023
Standard Error	1002250
Observations	31

(A) Regression Analysis, write the model, write the ANOVA Interpretation. **7**
(B) Write the interpretation and significance of R-square and bl. **7**