GUJARAT TECHNOLOGICAL UNIVERSITY
M.Arch. – SEMESTER – III • EXAMINATION – WINTER - 2020

Subject Code: X36102   **Date:01/01/2021**
Subject Name: Quantitative Research Method
Time:10.30 am TO 12.30 pm   **Total Marks: 60**
Instructions:
1. **Attempt any FOUR out of EIGHT questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1   (a)   Objective Type Questions   15
1. The mean of a distribution is 14 and the standard deviation is 5. What is the   value of the coefficient of variation?

a. 60.4%
b. 48.3%
c. 35.7%
d. 27.8%

2. Data collected by NADRA to issue computerized identity cards (CICs) are

a. Unofficial data
b. Qualitative data
c. Secondary data
d. Primary data

3. Given $X_1=12, X_2=19, X_3=10, X_4=7$, then $\sum_{i=1}^4 X_i$ equals?

a. 36
b. 48
c. 41
d. 29

4. The number of accidents in a city during 2010 is

a. Discrete variable
b. Continuous variable
c. Qualitative variable
d. Constant

5. According to the empirical rule, approximately what percent of the data should lie within $\mu \pm 2\sigma$?

a. 75%
b. 68%
c. 99.7%
d. 90%

6. Census reports used as a source of data is

a. Primary source
b. Secondary source
c. Organized data
d. None

7. The grouped data is also called

a. Raw data
b. Primary data
c. Secondary data
d. Qualitative data

8. Define : chi square
9. Define : hypothesis
10. Define : regression

Q.2	(a)	Define following terms: Type -1 error, type- 2 error, correlation, standard error, regression, standard deviation	08
	(b)	Write a Short note on correlation	07
Q.3	(a)	How strong is the relationship between the alcohol content and the number of calories in 12-ounce beer? To determine if there is a positive linear correlation, a random sample was taken of beer's alcohol content and calories for several different beers ("Calories in beer,," 2011), and the data are in table. Find the correlation coefficient and the coefficient of determination using the formula.	08
	(b)	Explain demography.	07
Q.4	(a)	Suppose the correlation coefficient is 0.2 and the number of observations is 32. What is the calculated test statistic? Is this significant correlation using a 5% level of significance?	08
	(b)	What are the types of hypothesis testing	07
Q.5	(a)	How Planning will be affected , discuss with reference to demography	08
	(b)	Find the standard error of the estimate for the beer data using the formula. To determine if there is a positive linear correlation, a random sample was taken of beer's alcohol content and calories for several different beers ("Calories in beer,," 2011), and the data are in table	07
Q.6	(a)	Write a Short note on Chi square goodness of fit test	08
	(b)	Discuss Multiple regression	07
Q.7	(a)	Suppose the estimated slope coefficient is 0.78, the sample size is 26, the standard error of the coefficient is 0.32, and the level of significance is 5%. Is the slope difference than zero?	08
	(b)	Explain the Significance of R^2	07
Q.8	(a)	Write the Assumptions of Pearson's correlation coefficient	08
	(b)	Discuss least square method	07

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Brand	Brewery	Alcohol Content	Calories in 12 oz
Big Sky Scape Goat Pale Ale	Big Sky Brewing	4.70%	163
Sierra Nevada Harvest Ale	Sierra Nevada	6.70%	215
Steel Reserve	MillerCoors	8.10%	222
Coors Light	MillerCoors	4.15%	104
Genesee Cream Ale	High Falls Brewing	5.10%	162
Sierra Nevada Summerfest Beer	Sierra Nevada	5.00%	158
Michelob Beer	Anheuser Busch	5.00%	155
Flying Dog Doggie Style	Flying Dog Brewery	4.70%	158
Big Sky I.P.A.	Big Sky Brewing	6.20%	195

Table for Reference