| G.R. No. | |
|---|---|
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**DECEMBER 2021 - ENDSEM EXAM**
**FINAL. YEAR B. TECH. (CIVIL) (SEMESTER - I)** *CIVIL / MECH*
**COURSE NAME: BUSINESS ANALYTICS**
**COURSE CODE: IOEUA40184F**
**(PATTERN 2018)**

Time: [1 Hour]                                                    [Max. Marks: 30]

**(*) Instructions to candidates:**
1) **Answer Q.1 OR Q.2, Q.3 OR Q.4, Q.5 OR Q.6.**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed**
4) **Use suitabie data where ever required**

Q.1 a  Simplify the use of Power BI Gateway in detail and also importance of Power BI Mobile.    4 Marks

Q.1 b  Justify the necessity of data transformation and also distinguish some advance data transformations in Power BI    6 Marks

**OR**

Q2 a  Identify the importance of Power BI Service    4 Marks

Q2 b  Simplify YTD QTD and MTD with suitable examples and develop DAX to calculate it    6 Marks

Q.3 a  Identify the significance of regression analysis with examples    4 Marks

Q.3 b  A study is conducted to determine whether students' first year GPA (Y) can be predicted by their ACT score (X). A random sample of n=120 freshmen from a small college were selected. The following EXCEL output gives the results of a simple linear regression on the data.    6 Marks

    a. Develop the regression equation for predicting GPA as function of ACT score

    b. Determine the predicted GPA for student scoring 20 on the ACT?

    c. Relationship whether positive or negative between GPA and ACT exists?

    d. Identify predictor and target variable?

| Regression Statistics | |
|---|---|
| Multiple R | 0.2695 |
| R Square | 0.0726 |
| Adjusted R Square | 0.0648 |
| Standard Error | 0.6231 |
| Observations | 120 |

ANOVA

| | df | SS | MS | F | Significance F |
|---|---|---|---|---|---|
| Regression | 1 | 3.5878 | 3.5878 | 9.2402 | 0.0029 |
| Residual | 118 | 45.8176 | 0.3883 | | |
| Total | 119 | 49.4055 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Intercept | 2.11 | 0.3209 | 6.5880 | 0.0000 | 1.4786 | 2.7495 |
| ACT(X) | 0.04 | 0.0128 | 3.0398 | 0.0029 | 0.0135 | 0.0641 |

**OR**

Q.4 a  Simply the significance of the term central tendency with examples    4 Marks

**Q.4 b**   A commercial real estate company is interested in the relationship between properties' rental prices (Y), and the following predictors: building age, expenses/taxes, vacancy rates, and square footage. The results for a regression are given below.

**6 Marks**

| Regression Statistics | |
|---|---|
| Multiple R | 0.7647 |
| R Square | 0.5847 |
| | |
| Standard Error | 1.1369 |
| Observations | 81 |

ANOVA

| | df | SS | MS | F | P-value |
|---|---|---|---|---|---|
| Regression | 4 | 138.3269 | 34.5817 | 26.7555 | 0.0000 |
| Residual | 76 | 98.2306 | 1.2925 | | |
| Total | 80 | 236.5575 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Intercept | 12.2006 | 0.5780 | 21.1099 | 0.0000 | 11.0495 | 13.3517 |
| age | -0.1420 | 0.0213 | -6.6549 | 0.0000 | -0.1845 | -0.0995 |
| exp/tax | 0.2820 | 0.0632 | 4.4642 | 0.0000 | 0.1562 | 0.4078 |
| vacancy | 0.6193 | 1.0868 | 0.5699 | 0.5704 | -1.5452 | 2.7839 |
| sqfoot | 0.0000 | 0.0000 | 5.7224 | 0.0000 | 0.0000 | 0.0000 |

    a. Relationship between rental rate and any of these predictors? Interpret the strength of the relationship?
    b. Conclude the regression equation.
    c. Determine properties rental prize for 10years old building with 0 tax, 2 vacancy and 500Sq.ft area.
    d. Identify predictor and target variable.

**Q.5 a**   Distinguish the importance of Tableau architecture with neat diagram?   **4 Marks**

**Q.5 b**   Justify the Business analytics role in detail played in HR management.   **6 Marks**

**OR**

**Q.6 a**   Simplify the significance of all tableau products.   **4 Marks**

**Q.6 b**   Justify Business analytics role in detail played in educational industry.   **6 Marks**