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St. Claret College

Autonomous, Bengaluru

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PG END SEMESTER EXAMINATION-JUNE/JULY 2026

M.Com: IV SEMESTER

MCO DSF 4525: FINANCIAL ANALYTICS

TIME: 3 hours. **MAX. MARKS: 70**

This paper contains THREE printed pages and FOUR parts

Instructions:
1. **Verify and ensure that the question paper is completely printed.**
2. **Any discrepancies or questions about the exam paper must be reported to the COE within 1 hour after the examination.**
3. **Students must check the course title and course code before answering the questions.**

PART-A

Answer EIGHT questions out of TEN. Each answer carries TWO marks. **[8x2 = 16]**

1. Give the meaning of Financial Analytics.
2. State the types of financial data with examples.
3. Define Free Cash Flow (FCF).
4. State any two applications of Financial Analytics.
5. What is EV/EBITDA Multiple?
6. A bank wants to predict loan default (Default/No Default). Should it use Linear Regression or Logistic Regression? Justify.
7. Why are outliers problematic in regression analysis?
8. x = [10,20,30]
   print(x[3])
   Will the code execute successfully? Justify your answer.
9. A researcher obtains the following results:

Transformation	ADF p-value
Level	0.55
First Difference	0.18
Second Difference	0.02

   Interpret the results and explain at which stage the series becomes stationary.
10. What is autocorrelation in a time-series data?

PART-B

Answer any FOUR questions out of SIX. Each answer carries FIVE marks. **[4x5=20]**

11. Discuss the four types of Data Analytics with examples.
12. Explain Classification and Regression techniques in Machine Learning.
13. Discuss the concept of Time Value of Money in DCF Analysis.

14. Discuss the consequences of multicollinearity in financial forecasting models.
15. Emami is considering the acquisition of Zydus Wellness to strengthen its presence in the health and wellness segment. The management seeks to estimate the target company's enterprise value using comparable company multiples.

	Enterprise Value Data(Rs)		
Company	**Share Price**	**Shares Outstanding**	**Net Debt**
Zydus Wellness	25.50	100	450
Dabur India	18.75	120	380
Marico	32.40	80	620
Godrej Consumer Products	21.60	110	510
Jyothy Labs	28.90	90	570
Bajaj Consumer Care	35.20	75	690

	Financials(Rs)	
Company	**Revenue**	**EBITDA**
Zydus Wellness	1,250	310
Dabur India	980	245
Marico	1,450	390
Godrej Consumer Products	1,120	285
Jyothy Labs	1,320	340
Bajaj Consumer Care	1,580	425

16. The following is a coding in python:

```
from sklearn.metrics import mean_absolute_error
actual = [100,120,140]
predicted = [110,115,145]
mae = mean_absolute_error(actual,predicted)
print(mae)
```

calculate MAE and interpret the obtained value and explain the purpose of the mean_absolute_error() function.

PART-C

Answer any TWO questions out of THREE. Each answer carries TEN marks. **[2X10=20]**

17. Explain the various types of financial models with examples.
18. A retail company wants to study the relationship between advertising expenditure and sales. The following data are available:

Advertising Expenditure (Rs '000)	Sales (Rs '000)
10	25
20	45
30	65
40	85
50	105

Write a Python program using LinearRegression from sklearn to fit a regression model for the above data and display the coefficient, intercept, and predict sales when advertising expenditure is Rs. 60,000.

19. Quarterly data on gasoline consumption and price are given. A simple linear regression of the logarithm of gasoline consumption on the logarithm of price gives the following results:

Dependent variable: logarithm of gasoline consumption

Variable	Coefficient	t-Statistic	p-value
Constant	2.12	3.87	0.00
Log of Price	-2.15	-18.16	0.00
R^2	0.86		
Adjusted R^2	0.85		
Standard Error of Regression	0.05		
Sum of Squared Residuals (SS Residual)	0.16		
Durbin-Watson Statistic	0.29		
F-Statistic	329.75		
Prob(F-Statistic)	0.00		

(i) Give the economic interpretation of the regression results.
(ii) If you were a seller of gasoline, would you contemplate raising the price of the product?
(iii) Comment on the goodness of fit of the estimated model.
(iv) Explain the statistical significance of the model.

PART-D

Answer the following. **[1X14=14]**

20. An analyst is estimating the intrinsic value of Astra Dynamics Ltd. using the Discounted Cash Flow (DCF) method. The following projected financial information (Rs. Crores) is available for the next five years:

21.

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Profit Before Tax	18	24	26	34	40
Depreciation	1	2	2	3	3
Capital Expenditure	4	6	8	8	10
Increase in Working Capital	-1	2	4	5	6.5

Additional Information:

The company is subject to a corporate tax rate of 30%. The estimated cost of equity is 20.5%, while the cost of debt is 6.3%. The firm's capital structure consists of a market value of equity of Rs. 150 crores and a market value of debt of RS. 75 crores. For the purpose of terminal value estimation, a terminal growth rate of 5% is assumed. The company has outstanding debt of Rs. 75 crores and 35 crore shares outstanding. These details are to be used in calculating the WACC, enterprise value, equity value, and intrinsic value per share under the DCF valuation model.

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