



DELHI SCHOOL OF BUSINESS
By Vivekananda Institute of Professional Studies - TC

Delhi School of Business
PGDM FINTECH Program
TERM - III (Batch: 2023-25)
END-TERM EXAMINATIONS
April 2024

Course Name	Human Resource Management (HRM)	Course Code	
Duration	2.5 Hours	Max. Marks	40

INSTRUCTIONS:

1. Question number 1 & 2 are mandatory. They carry 10 marks each
2. Attempt ANY 4 questions from Question number 3 to 8. They carry 5 marks each

QUESTIONS

1. Explain the following terms:

- a. Induction Training
- b. Manpower Planning
- c. Variable Pay
- d. Talent Acquisition
- e. Salary Benchmarking

2. Explain the role of a HR Manager at various stages during the employee life cycle.

3. What do you understand by "Diversity". How does a diverse workforce benefit an organization?

4. Write a "Job Description" for the position of "Finance Head" for an Automobile Manufacturing Company giving specific details about the Role & Responsibilities, Skill Set required, qualification & experience required, compensation and benefits offered, etc

5. Explain 90 Degree, 180 Degree and 360 Degree Performance Appraisal Systems.

6. a. How would you assess the effectiveness of a training?
b. How would you assess the ROI of a training?

7. What are the various methods of "Employee Retention"?

8. Explain the concept of "PIP". Under what circumstances is it applied?

Performance
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Course Name	Financial Management	Course Code	FM
Duration	2.5 Hours	Max. Marks	40

Instructions:

1. Attempt all questions. Marks will be written against each of them.
2. Answer should be neat, clean, and legible handwriting

Q.1

(5+5 Marks) CO2,3,4

(a) John inherited the following securities on his uncle's death:

Types of Security	Nos.	Annual Coupon %	Maturity Years	Yield %
Bond A (₹ 1,000)	10	9	3	12
Bond B (₹ 1,000)	10	10	5	12
Preference shares D (₹ 100)	100	11	*	13*
Preference shares D (₹ 100)	100	12	*	13*

*Likelihood of being called at a premium over par.

Compute the current value of his uncle's portfolio.

(b) Under the Traditional approach to capital structure, what happens to the cost of debt and cost of equity when leverage increases? Describe the behaviour of overall cost of capital.

Q.2

(5+5Marks) CO2,3,4

(a) A Company issues ₹ 10,00,000 , 12% debentures of ₹ 100 each. The debentures are redeemable after the expiry of fixed period of 7 years. The Company is in 35% tax bracket. Required:

(i) Calculate the cost of debt after tax, if debentures are issued at

$$\frac{I(1-t) + \frac{RV - NP}{n}}{\text{Avg}}$$



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Par ; (b) 10% Discount; (c) 10% Premium.

(ii) If brokerage is paid at 2%, what will be the cost of debentures, if issue is at par?

(b) The following figures are taken from the current balance sheet of Delaware & Co.

	Amount(Rs.)
Capital	8,00,000
Share Premium	2,00,000
Reserves	6,00,000
Shareholder's funds	16,00,000
12% Perpetual debentures	4,00,000

An annual ordinary dividend of Rs 2 per share has just been paid. In the past, ordinary dividends have grown at a rate of 10 per cent per annum and this rate of growth is expected to continue. Annual interest has recently been paid on the debentures. The ordinary shares are currently quoted at Rs 27.50 and the debentures at 80 per cent .Ignore taxation. You are required to estimate the weighted average cost of capital (based on market values) for Delaware & Co.

Q.3

(10Marks) CO2,3,4

Bright Matels Ltd. is considering two different investment proposals, A and B. The details are as under

		Proposal A(Rs.)	Proposal B(Rs.)
Investment Cost		9,500	20,000
Estimated Income	Year 1	4,000	8,000
	Year 2	4,000	8,000
	Year 3	4,500	12,000

Suggest the most attractive proposal on the basis of the

- (i) NPV method considering that the future incomes are discounted at 12%.
- (ii) Profitability Index and
- (iii) IRR of the two proposals.

Q.4

(10Marks) CO 3,4,5

(a) The balance sheet of Well Established Company is as follows :

Liabilities	Amount(Rs)	Assets	Amount (Rs)
Equity Share Capital	60,000	Fixed Assets	1,50,000



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Retained Earnings	20,000	Current Assets	50,000
10% Long Term Debt	80,000		
Current Liabilities	40,000		
	2,00,000		2,00,000

The company's Total Assets turnover ratio is 3, its Fixed operating costs are Rs.1,00,000 and its Variable operating cost ratio is 40%. The income tax rate is 30%. Calculate for the Company the different types of leverages given that the face value of the share is Rs.10.

(b) Y Limited requires ₹ 50,00,000 for a new project. This project is expected to yield earnings before interest and taxes of ₹10,00,000. While deciding about the financial plan, the company considers the objective of maximizing earnings per share. It has two alternatives to finance the project – by raising debt ₹5,00,000 or ₹ 20,00,000 and the balance, in each case, by issuing Equity Shares. The company's share is currently selling at ₹300, but is expected to decline to ₹250 in case the funds are borrowed in excess of ₹20,00,000. The funds can be borrowed at the rate of 12 percent upto ₹5,00,000 and 10 percent over ₹5,00,000. The tax rate applicable to the company is 25 percent. Which form of financing should the company choose ?



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Course Name	Cloud Computing	Course Code	
Duration	2.5 Hours	Max. Marks	40

Instructions:

1. Please provide well-structured responses with examples and diagrams wherever possible.
2. Attempt any 4 out of 1st Five Questions,
Ps Note: Question6 (Case Study) is mandatory

Q1.(6 Marks)

In the context of fintech applications migrating to cloud environments, discuss the advantages and challenges of transitioning from a monolithic architecture to a microservices architecture. How does this architectural shift impact scalability, resilience, and maintenance of financial applications?

Q2.(6 Marks)

APIs play a crucial role in integrating various financial services in a fintech ecosystem. Explain how APIs facilitate interoperability and data exchange between different financial institutions and third-party service providers in the cloud environment.

flexibility, automation

Q3.(6 Marks)

Virtualization is a fundamental aspect of cloud computing infrastructure. Describe the role of virtualization technologies such as EC2 instances in AWS for hosting fintech applications. How does AWS enable efficient resource utilization and scalability through virtualization, particularly in the context of fluctuating workloads in financial services?

Q4.(6 Marks)

Data management is critical in fintech applications, especially concerning compliance, security, and performance. Discuss the considerations and strategies for selecting appropriate databases and storage solutions in AWS cloud environments for storing sensitive financial data. How does AWS offer specialized services like RDS, DynamoDB, and S3 to address the specific needs of fintech companies?



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Q5 (6 Marks)

Security and access control are paramount in fintech applications handling sensitive financial information. Explain the significance of Virtual Private Cloud (VPC) and Identity and Access Management (IAM) services provided by AWS in ensuring secure and isolated environments for fintech workloads

Q6 (16 Marks)

Case Study: JKL Investments is a financial services company that manages investment portfolios for clients. JKL Investments recently migrated its infrastructure to the AWS cloud to improve scalability and performance. However, the company wants to ensure that its cloud architecture adheres to best practices and aligns with the AWS Well-Architected Framework's five pillars.

Question: Using the case study of JKL Investments, conduct a comprehensive assessment of its cloud architecture against the AWS Well-Architected Framework's five pillars: Operational Excellence, Security, Reliability, Performance Efficiency, and Cost Optimization. Provide specific recommendations for each pillar to enhance JKL Investments' cloud infrastructure and ensure alignment with best practices.

Consider the following aspects:

- **Operational Excellence:** Recommend strategies for automating deployment processes, monitoring application health, and implementing incident response procedures to improve operational efficiency and agility.
- **Security:** Identify potential security vulnerabilities and compliance risks in JKL Investments' cloud architecture, and propose measures to strengthen data protection, access controls, and threat detection mechanisms.
- **Reliability:** Assess the resilience of JKL Investments' infrastructure against failures and disruptions, and suggest improvements to enhance fault tolerance, disaster recovery, and system monitoring capabilities.
- **Performance Efficiency:** Analyze performance bottlenecks and optimization opportunities within JKL Investments' systems, and recommend optimizations for compute, storage, and networking resources to improve application performance and scalability.
- **Cost Optimization:** Review JKL Investments' cloud spending patterns and identify areas for cost reduction through rightsizing, usage optimization, and the adoption of cost-effective services.



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Course Name	MIS-ERP	Course Code	
Duration	2.5 Hours	Max. Marks	40

Instructions:

1. Please provide detailed and well-structured responses.

Question 1 (10 Marks, CO1/CO3)

A Fintech Company operating in lending domain is planning to implement a CRM application to improve its Customer Relationship Management as it has been receiving consistent complaints pertaining to level of service provided and ability to resolve issues by its team.

- i) What are the overall benefits can the company expect from the CRM implementation
- ii) What are the key processes that are likely to get more efficient/productive by implementing CRM.
- iii) What typical challenges in the ERP/CRM implementation that the company must plan for proactively
- iv) What stages are involved in the CRM/ERP Implementation
- v) What are cost components of the CRM/ERP implementation

Question 2 (10 Marks, CO1/CO3)

Case Study: A manufacturing company produces over 30 products across two plants, has 15-person sales team focusing on various products/regions. The company is facing following challenges. 1) Delayed order processing & handover to manufacturing 2) Non-availability of the critical raw material required to fulfil the orders 3) High Defect rates & its tracking 4) high unsold inventory of many products thus locking precision capital and storage space 5) Lack of accurate status reporting impacting planning & scheduling

Describe how ERP can help to improve operations of the company by addressing above challenges. Provide detailed response against each challenge specified above.



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Question 3 (10 Marks, CO2)

Conceptualize a database (set of tables) for fintech organization that is operating in home loan domain. The organization would like to maintain records pertaining to 1) Customers 2) Approved home loans and 3) Loan application pipeline

- a) Explain how to organize this data in various tables, propose a set of tables to store the above records (4 Marks)
- b) Identify relevant fields/columns of all the proposed tables and their data types, feel free to make assumptions and design fields required for each table (4 Marks)
- c) Propose a primary key for each table (2 Marks)

Question 4 (10 Marks, CO2)

Customer table is available with following data, write SQL queries for the requirements mentioned below:

Customer Table

CustomerID INT PRIMARY KEY,
Name VARCHAR (255)
Revenue INT
Region CHAR (1)

CustomerID	Name	Revenue	Region
1	Malik Ltd	250000	N
2	New Art	150000	S
3	Machine Works	95000	W
4	High Life	300000	E
5	Eastern World	50000	E

Write SQL Queries to extract the following data from the customer table.

- i) Extract list of customers where revenue is more than 1 Lac
- ii) Extract list of customers for region north
- iii) Extract list of all customers and sort it based on revenue
- iv) Extract count of all records in the customer table
- v) Extract average revenue from all customers



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Course Name	R for Managers	Course Code	
Duration	2.5 Hours	Max. Marks	40

Instructions:

Instructions: Answer all questions. Each question carries 8 marks. Ensure your code is well-commented to explain your logic and steps. Utilize R packages like `quantmod`, `forecast`, and `TTR` for completing the tasks.

Question 1

Explain the process of downloading stock price data for Nvidia (NVDA) and Meta (META) using their ticker symbols over the last three years. Discuss the R packages that are essential for fetching this data and how you can extract the "Adjusted Close" prices to create a dataframe. Provide R code snippets to demonstrate this process. (8 marks)

Question 2

Once you have the "Adjusted Close" prices for both stocks, the next step is to prepare this data for time series analysis. Describe how you would convert the date column into a format suitable for time series analysis and check for missing values. What methods would you use to handle any missing data points? Provide relevant R code to illustrate your answer. (8 marks)

Question 3

Visualizing data can provide insights that are not apparent from raw data alone. Using R, illustrate how you would create a line plot to compare the trends in stock prices of Nvidia and Meta. Discuss the customizations you would add to the plot to enhance its effectiveness and interpretability. Include R code for generating this plot. (8 marks)



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Question 4

Outliers can significantly affect the analysis of financial time series data. Describe how you would identify and replace outliers in your dataset using the Interquartile Range (IQR) method. Provide R code that identifies outliers and replaces them with suitable values, ensuring the integrity of your time series data. (8 marks)

Question 5

Forecasting is a critical skill in financial management. Using the ARIMA model, forecast the next 60 days' stock prices for Nvidia and Meta. Explain the steps for choosing an appropriate ARIMA model, fitting the model to your time series data, and validating the model with residual plots. Provide detailed R code for each step of your analysis and discuss how you would interpret the results. (8 marks)



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Course Name	Python for Managers	Course Code	PYM
Duration	2.5 Hours	Max. Marks	40

Instructions:

Answer all questions. Each question carries 8 marks. Ensure your code is well-commented to explain your logic and steps. The use of Python libraries like pandas, matplotlib, and seaborn is encouraged.

Question 1

Describe the process of downloading stock price data for Apple and Google over the last three years, ticker symbol AAPL and GOOG. Mention the Python libraries you would use for downloading this data and explain how you would use them to extract the "Adjusted Close" column for both stocks. Include code snippets to illustrate your answer. (8 marks)

Question 2

After obtaining the "Adjusted Close" prices for Apple and Google, data cleaning becomes crucial before any analysis. Explain the steps you would take to check for and handle missing values in your dataset. If there are any rows with null values, how would you deal with them? Provide Python code that demonstrates how to perform these data cleaning steps. (8 marks)

Question 3

Visualization is a powerful tool for analyzing stock price movements. Using Python, how would you create a line chart to analyze the stock prices of Apple and Google? Your chart should include all possible customizations (like title, labels, legend, and colors) to make the chart informative and visually appealing. Provide a detailed code example to create such a line chart. (8 marks)



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Question 4

Analyze the year-on-year stock price movement of Apple and Google for the periods 2021-22, 2022-23, and 2023-24. Using Python, how would you highlight the area between the minimum and average stock price for both Apple and Google in your line chart? Discuss the Python code and libraries you would use to accomplish this task, ensuring your explanation covers the logic behind calculating the minimum and average prices. (8 marks)

Question 5

The ability to compare two different scales in a single chart can provide deep insights, especially in financial data analysis. Describe how you would generate a twin axis chart for the Apple and Google stock prices. Additionally, explain how you would customize the chart by coloring the axes according to your preference and adding vertical lines at the highest peak points of both stocks. Provide Python code examples to illustrate how to implement these visualizations. (8 marks)



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Course Name	Business Research Methods	Course Code	BRM
Duration	2.5 Hours	Max. Marks	40

Instructions:

1. Attempt all questions. Marks will be written against each of them.
2. Answer should be neat, clean, and legible handwriting

Q.1

(5 Marks) CO1,2

Write short notes on the following terms:

- (a) Open-ended questions Vs Closed-ended question
- (b) Likert Scale Vs Semantic Differential Scale
- (c) Type I Vs Type II errors
- (d) Univariate Vs Bivariate analysis
- (e) Histogram Vs Pie Charts

Q.2

(10Marks) CO1,2

Anmol Constructions is a leading company in the construction sector in India. It wants to construct flats in Raipur and Dehradun, the capitals of the newly formed states of Chhattisgarh and Uttarakhand, respectively. The company wants to estimate the amount that customers are willing to spend on purchasing a flat in the two cities. It randomly selected 25 potential customers from Raipur and 27 customers from Dehradun and posed the question, "how much are you willing to spend on a flat?" The data collected from the two cities. The company assumes that the intention to purchase of the customers is normally distributed with equal variance in the two cities taken for the study(95% as the confidence level). The hypothesis testing about the difference between two population means using the t statistic was performed using MS Excel and the result is given below

On the basis of the result given under

- (a) Set the null and alternative Hypothesis
- (b) Interpret the statistical results and give business implications



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	A	B	C
1	t-Test: Two-Sample Assuming Equal Variances		
2			
3		Variable 1	Variable 2
4	Mean	143.4444444	162.8
5	Variance	203.6410256	273.0833333
6	Observations	27	25
7	Pooled Variance	236.9733333	
8	Hypothesized Mean Difference	0	
9	df	50	
10	t Stat	-4.530082561	
11	P(T<=t) one-tail	1.84098E-05	
12	t Critical one-tail	1.675905026	
13	P(T<=t) two-tail	3.68195E-05	
14	t Critical two-tail	2.008559072	

Q.3

- (a) Describe the Qualitative Vs. Quantitative Research
(b) Explain Internal Vs External source of Secondary data.

(5 Marks) CO 1,2

Q.4

Name the measurement scales used in each of the following cases

(5 Marks) CO 1,2

- (a) Student ID number \mathcal{N}
(b) Buy – Did Not Buy \mathcal{R}
(c) Student class rank \mathcal{O}
(d) Choose from the following: \mathcal{O}
- Dissatisfied
 - Satisfied
 - Very satisfied
 - Delighted
- (e) Indicate your level of education: \mathcal{N}
- Some high school
 - High school diploma
 - Some college
 - College degree
 - Graduate degree
- (f) Student grade point average (GPA) \mathcal{R}
(g) Temperature (Celsius and Fahrenheit) \mathcal{I}
(h) Amount spent on last purchase \mathcal{O}
(i) Salesperson sales volume \mathcal{I}
(j) Annual family income \mathcal{I}

Q.5

(15 Marks) CO 1,2,4

A consumer electronics company has adopted an aggressive policy to increase sales of a newly launched product. The company has invested in advertisements as well as employed salesmen for increasing sales rapidly. The data for sales, the number of employed salesmen, and

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advertisement expenditure for 24 randomly selected months was taken and a regression model was developed to predict the impact of advertisement and the number of salesmen on sales. The output of the regression is provided. Give the following information

- i. Regression Coefficients
- ii. Multiple Regression Equation
- iii. On the basis of the regression model, calculate the predicted sales of a given month when number of salesmen employed are 35 and advertisement expenditure is Rs 500,000
- iv. R square, Adjusted R square, F statistic and standard error
- v. Interpretation, Statistical Conclusion and Significance for the business

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.880 ^a	.739	.714	1560.54052	1.791

a. Predictors: (Constant), Advertisement, Salesmen

b. Dependent Variable: Sales

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.449E8	2	7.243E7	29.740	.000 ^a
	Residual	5.114E7	21	2435305.426		
	Total	1.960E8	23			

a. Predictors: (Constant), Advertisement, Salesmen

b. Dependent Variable: Sales

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	3856.693	1340.772		2.878	.008	1068.404	6644.981		
	Salesmen	-104.321	39.489	-.306	-2.642	.015	-188.443	-22.198	.929	1.077
	Advertisement	24.609	3.923	.726	6.273	.000	18.451	32.768	.929	1.077

a. Dependent Variable: Sales

	A	B	C	D	E	F	G
1	SUMMARY OUTPUT						
2							
3	Regression Statistics						
4	Multiple R	0.8596888					
5	R Square	0.7390649					
6	Adjusted R Square	0.714214					
7	Standard Error	1560.5465					
8	Observations	24					
9							
10	ANOVA						
11		df	SS	MS	F	Significance F	
12	Regression	2	144851448.6	72425724	29.73989	7.47465E-07	
13	Residual	21	51141413.94	2435305			
14	Total	23	195992862.5				
15							
16		Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
17	Intercept	3856.6927	1340.772104	2.876471	0.009033	1068.404453	6644.98089
18	X Variable 1	-104.32061	39.48937978	-2.64174	0.015252	-186.443271	-22.19795
19	X Variable 2	24.609282	3.923141041	6.272852	3.2E-06	16.45066339	32.7679002



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Course Name	Strategic Management	Course Code	
Duration	2.5 Hours	Max. Marks	40

INSTRUCTIONS

1. Attempt any 4 questions
2. Each question carries 10 marks

QUESTIONS

- ✓ 1. Analyse BYJUS case on the basis of BCG Matrix.
- ✓ 2. Formulate a Business Strategy using IFE Matrix for Air India Group consisting of Air India, Air India Express, Air Asia and Vistara.
- ✓ 3. What are the factors to be considered in EFE matrix? How EFE Matrix helps in understanding status of OYO as a brand?
- ✓ 4. Prepare a product positioning map for "Country Delight" pulses and spices product line.
5. Devise functional strategies for Motilal Oswal's secondary markets operations?
6. Compare the strategic reasons for failure of 'Kingfisher Airlines' vis a vis 'Jet Airways.'
