FINAL EXAMINATION

December 2016

Advanced Financial Management

Time Allowed: 3 Hours

Full Marks: 100

The figures on the right margin indicate full marks.

All workings must form part of your answers.

Wherever necessary, suitable assumptions may be made and clearly stated in the answer.

No present value table or other statistical table will be provided in addition to this question paper.

Candidates may use relevant values from the information given at the end of the question paper for computation of answers.

*This paper contains two sections, **A** and **B**. **Section A** is compulsory and contains question **1** for **20** marks. **Section B** contains questions **2** to **8**, each carrying **16** marks. Answer **any five** questions from **Section B**.*

Section A

1. (a) Answer *all* sub-divisions. Each carries 2 marks: 2×7=14

   (i) The following particulars relate to a mutual fund scheme:

Sector	Investment in shares (at cost) ₹ crores	Index on Purchase Date	Index on Valuation Date
IT and ITES	28	1750	2950
Infrastructure	15	1375	2475

   The outstanding number of units is 1·25 crores.

   Calculate the Net Asset Value (NAV) per unit.

   (ii) The capital of R Ltd as on 31-03-2016 is as follows:

   9% Preference Shares of ₹ 10 each   8,00,000

   Equity Shares of ₹ 10 each   14,00,000

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Profit after tax during the year = ₹ 3,60,000

Equity Dividend paid = 20%

Market Price of equity shares = ₹ 40 per share

Calculate the Earnings per share (EPS) and the Price Earning Ratio.

(iii) A convertible bond with face value of ₹ 10,000 is issued at ₹ 13,500 with coupon rate of 10·5%. The conversion rate is 15 shares per bond. The current market price of bond and share are ₹ 14,750 and ₹ 800 respectively. Compute the premium over conversion value.

(iv) State 4 features of Government Securities.

(v) What are the guidelines governing privately managed provident funds regarding the minimum per cent of investment?

(vi) An investor has two portfolios known to be on minimum variance set for a population of three securities A, B and C having weights mentioned below:

	WA	WB	WC
Portfolio X	0·3	0·4	0·3
Portfolio Y	0·2	0·5	0·3

What would be the weight for each stock for a portfolio constructed by investing ₹ 5,000 in portfolio X and ₹ 3,000 in portfolio Y?

(vii) What is an entry load and an exit load in the context of a Mutual Fund?

(b) State whether each of the following statements is 'True' or 'False'. Each question carries one mark. (You may write the Roman numeral and whether True or False without copying the situations into your answer books.) 1×6=6

(i) The delta of a stock option is the number of units of stock one should hold per 100 options sold to create a risk-free hedge.

(ii) Forward contracts have more potential for default risks than futures.

(iii) Bridge Finance refers to loans taken by a company from its promoters until loans are disbursed by Financial Institutions.

(iv) Operating lease can be cancelled by the lessee before the expiry date.

(v) No prior approval of RBI is required for issue of Commercial Paper.

(vi) In India, the credit rating symbol for moderate safety is BB.

Section B

2. (a) A petrochemical plant needs to process 32000 barrels in three months' time. The spot price per barrel is ₹ 8,775. A futures contract expiring three months from now is selling for ₹ 9,800 per barrel.

Assume that the size of one futures contract is 100 barrels.

The plant wants to hedge through futures.

Answer the following questions:

(i) What would its position be in the futures market?

(ii) How should the plant hedge itself against a price change after three months?

(iii) How many futures should be transacted and in what manner?

(iv) Explain and arrive at the effective price per barrel under the hedging strategy that would be paid by the plant if after 3 months, the price per barrel

　　　　- declines to ₹ 7,900

　　　　- increases to ₹ 10,600　　　　　　　　　　　　　　　　　　　　8

(b) A Mutual Fund Company has introduced a scheme called Dividend Reinvestment Plan. The face value of a unit is ₹ 10. On 01-04-2011, Mr. K invested ₹ 2,00,000 in this plan when the Net Asset Value (NAV) was ₹ 38·20 per unit. The plan matured on 01/10/2016. The following are the particulars of the dividend declared over the period:

Date	Dividend (%)	NAV (₹)
30/09/2011	10	39·10
30/09/2013	15	44·20
30/09/2014	13	45·05
30/09/2015	16	44·80
01/10/2016		40·40

Ignore Security Transaction Tax.

What is the effective yield per annum on the above plan?   8

3. (a) The following data relate to JB Ltd's share price:

Current Price: ₹ 3,000 per share

6 months' future price = ₹ 3,500 per share

It is possible to borrow money in the market for transactions in securities at 12% p.a. Consider continuous compounding of interest.

Assume that no dividend was paid in the intervening period.

You are required to calculate the theoretical minimum price of a 6 months' forward purchase and explain the possible arbitrage opportunity.   8

(b) Expected returns on two stocks for certain market returns are given below:

Market Return	A	D
7%	9%	4%
25%	40%	18%

Calculate the following:

(i) Beta of the two stocks

(ii) Expected return of each stock if the market return is equally likely to be 7% or 25%.

(iii) The Security Market Line(SML), if the market return is equally likely to be 7% or 25%.

(iv) The alpha of the two stocks. 8

4. (a) G Ltd., an Indian Company has a payable of US $ 1,20,000 due in 3 months. The company wishes to cover the risk through the best of the following alternatives:

(i) Forward Contract   (ii) Money market and   (iii) Options.

The following information is available with the company:

Exchange Rate: Spot: ₹/$ 68·25 / 68·32

3-months Forward: ₹/$ 68·85 / 69

Interest Rates (%) p.a. with annual rests:

US   6·5 / 7 (Deposit/Borrow)

India   15 / 16 (Deposit/Borrow)

Call option on $ with strike price of ₹ 69 is available at a premium of ₹ 0·10/$.

Put option on $ with a strike price of ₹ 69 is available at a premium of ₹ 0·05/$.

The Accounts Department of the company forecasts the future spot rate after 3 months to be as follows:

Spot Rate after 3 months (₹/$)	Probability
68·40	0·10
69·00	0·60
69·60	0·30

You are required to advise G Ltd. the best alternative among the three with supporting calculations and relevant figures. 12

(b) XYZ Ltd. requires ₹ 20,00,000 in order to finance an expansion plan. The following information is provided:

  (i) Target Debt Equity ratio is 3:2.

  (ii) Earnings per share for the current year is ₹ 20. Dividend pay out ratio is 60% and dividend is expected to grow at 5% p.a. Only the current year's retained earnings is to be reckoned for the expansion.

  (iii) Current market price per equity share is ₹ 90. Flotation cost is ₹ 6 per share.

  (iv) Present equity share capital is ₹ 2 lacs, divided into fully paid shares of ₹ 10 each.

  (v) Corporate tax rate is 30%.

Find the cost of new equity, cost of retained earnings and the corresponding weights of these in % in the expansion plan that will be used in the calculation of weighted marginal cost of capital.

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5. (a) An eatery is located in its own premises at Street A in a city. The Management is planning a relocation to a nearby new location, College Road, also owned by it so that it can attract new clients. Two years ago, the College Road location was considered and ₹ 2,00,000 was paid to a consultant for site study. Due to metro rail construction, the idea had to be abandoned. Now the road is fit for easy access. Until now, the College Road premises could not be let out and was idle. But now, it can be let out on an annual year end lease rental of ₹ 1,20,000. On similar terms, Street A premises would fetch ₹ 2,50,000. The eatery would have to spend ₹ 10,00,000 on initial refurbishment if it relocates. This will entail a bank loan at 12% interest. 25% of its new sales would be from the old customers at the Street A premises who represented 25% of the Street A sales value. Other information is given below:

Figures (₹/annum) (valid for the next 5 years)	Street A (same as per existing values)	College Road
Sales	15,00,000	21,00,000

Variable Cost	10,00,000	11,00,000
Contribution	5,00,000	10,00,000
Fixed Cost (excluding depreciation)	1,50,000	2,40,000
Depreciation	30,000	

(i) Depreciation is on straight line basis over 5 years. Assume that the life of the project is 5 years from now in both the premises.

(ii) Income Tax rate applicable is 35% and taxes are payable at the end of the year.

(iii) Cash flows from operations arise at the end of the year.

(iv) There is no salvage value in both the cases at the end of the project life.

(v) Both the sites are meant for long term usage. There is no sale of the premises envisaged.

(vi) Weighted average cost of capital until this project begins is 10%.

(vii) The Bank loan has to be repaid in equal instalments of principal at the end of each year together with the applicable interest on the outstanding principal.

(viii) Assume no time lag between the capital expenditure and the commencement of operation.

(ix) Use P.V. factors as given in the table.

(x) Show calculations to the nearest rupee.

(xi) The cost – revenue structure is different in both the locations and the above table is applicable for all customers in a location.

(xii) No significant changes in the working capital requirement.

You are required to present a statement showing the evaluation on an incremental basis, of relocating to the new premises, showing the rationale behind the cash flows you consider and those that you do not, for the evaluation. Recommend from a financial perspective using the NPV method, whether the eatery should relocate to the College Road premises.   12

Please Turn Over

(b) Name the Regulatory Authority of the following entities:

(i)	Chit Funds
(ii)	Insurance Companies
(iii)	Housing Finance Companies
(iv)	Venture Capital Funds
(v)	Non-Banking Financial Companies
(vi)	Stock Broking Companies
(vii)	Nidhi Companies
(viii)	Private Banks

(You may mention the Roman numeral and the corresponding Regulatory Authorities without copying the entities in the answer books). 4

6. (a) DF, a leasing company has agreed to lease an equipment to its customer for 4 years, which is also the life of the equipment. The equipment costs ₹ 300 lacs, has no salvage value and can be depreciated in 4 years on straight line basis. The customer has requested that lease rentals be paid at the beginning of the first and second years and at the end of the third and fourth years in the ratio 2:2:1:1 so that it can match its own cash availability. DF's tax rate is 35%. Its target rate of return is 12% p.a. for this lease.

Calculate the lease rentals payable by the customer for each year.

Use the present value factors up to 3 decimal places only, as given in the table. Round off the cash flows to the nearest rupee. Present your calculations showing the P.V. of the cumulative depreciation shield, P.V. factors applied to cash inflows each year and arrive at the lease rentals. 10

(b) Identify the type of risk in each of the following independent situations:

(i) An owner of a house property wants to sell it, but he is not able to find buyers.

(ii) An ATM of a bank has supplied an extra ₹ 100 note for every transaction on a certain day until it was reported and rectified.

(iii) The risk of recession anticipated by the automobile industry.

(iv) High component of debt used in the capital structure of a company to take advantage of the high tax rates.

(v) The risk of loss in value of investment that cannot be eliminated by an investor through diversification.

(vi) Risk of a bank which has given a car loan to a person who has now defaulted two instalments of EMIs.

(You may present the Roman numeral and the risk without copying the situations into your answer books).   6

7. (a) A portfolio has the following constituents:

Securities	Cost (₹)	Dividend /Interest (₹)	Market Values (₹)	β
Equity Shares:				
GD	10,000	1,725	9,800	0·6
SI	15,000	1,000	16,200	0·8
BZ	14,000	700	20,000	0·6
Bonds : GB	36,000	3,600	34,500	0·2

(i) Find the risk free return (% up to two decimal places) given that the expected return on market portfolio under CAPM is 15·7% and considering simple average β for the market portfolio and average market return to be represented by the above portfolio.

(ii) Find the expected rate of return for each security in the given portfolio under CAPM, taking average return for market portfolio.

Please Turn Over

(iii) What is the underlying assumption in (i) above when we use simple average β?

(iv) What are the other appropriate weights that could be used to determine the average portfolio β? 10

(b) Identify the defects in the following statement: 3

A purchased for ₹ 90,000 a 10% Deep Discount Bond with face value ₹ 1,00,000 and maturity period of one year.

(c) What is "Rolling Settlement" in the context of Clearing House Operations? 3

8. (a) Mr. K purchased on DC Ltd.'s stock, one 3 month call option with a premium of ₹ 20 and a strike price of ₹ 550 and a 3 month put option with a premium of ₹ 10 and a strike price of ₹ 450.

DC's stock is currently selling at ₹ 500. Determine his profit or loss if:

(i) DC Ltd.'s share price falls to ₹ 350 after three months

(ii) DC Ltd.'s share price increases to 600 after three months.

Assume option size to be 100 shares of DC Ltd. 5

(b) The following information is available regarding four Mutual Funds:

Mutual Fund	Return %	Standard Deviation $(\sigma)\%$	β(Beta)
A	12%	15	0·80
B	16%	22	0·76
C	21%	37	1·15
D	13%	24	1·32

Risk Free rate is 10% and Face Value is ₹ 100 each.

Evaluate the performance of these Mutual Funds using Sharpe Ratio and Treynor's Ratio. Comment on the evaluation after ranking the funds. 5

(c) State the features of the Call Money Market on the following aspects:

   (i) Purpose

   (ii) Duration

   (iii) Security

   (iv) Call Rate

   (v) Lenders (Name four lenders)   6

You may use relevant figures from the following information:

$e^{.015}$	1·01511
$e^{.06}$	1·0618
$e^{.12}$	1·1275
$e^{.36}$	1·4326
$e^{.0036}$	1·00366
$e^{.72}$	2·0414

Present Value factors $(1 / (1+x))^n$

End of year (n) Rate (x)%	1	2	3	4	5	6	7
6·5%	0·939	0·882	0·829	0·777	0·730	0·685	0·644
7·8%	0·928	0·861	0·798	0·740	0·687	0·637	0·591
10%	0·909	0·826	0·751	0·683	0·621	0·564	0·513
12%	0·893	0·797	0·712	0·636	0·567	0·507	0·452