Roll No. .. .....

Total No. of Questions – **7** Total No. of Printed Pages – **15**

Time Allowed – **3** Hours Maximum Marks – **100**

# KLA

Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate has not opted for Hindi Medium, his/her answers in Hindi will not be valued.

Question No. 1 is compulsory.

Attempt any **five** out of the remaining **six** questions.

Wherever appropriate, suitable assumptions should be made and indicated in the answer by the candidate.

Working Notes should form part of the answer.

**Marks**

1. (a) EFD Ltd. is an export business house. The company prepares invoice in customers' currency. Its debtors of US$ 10,000,000 is due on April 1, 2015. **6**

Market information as at January 1, 2015 is :

| **Exchange rates US$ / INR** | | **Currency Futures US$ / INR** | |
|---|---|---|---|
| Spot | 0.016667 | Contract size : ₹ 24,816,975 | |
| 1-month forward | 0.016529 | 1-month | 0.016519 |
| 3-months forward | 0.016129 | 3-months | 0.016118 |

Marks

| | Initial Margin | Interest rates in India |
|---|---|---|
| 1-month | ₹ 17,500 | 6.5% |
| 3-months | ₹ 22,500 | 7% |

On April 1, 2015 the spot rate US$/INR is 0.016136 and currency future rate is 0.016134.

Which of the following methods would be most advantageous to EFD Ltd ?

(i) Using forward contract

(ii) Using currency futures

(iii) Not hedging the currency risk

(b) TUV Ltd. has invested in three Mutual Fund schemes as per the details given below : 4

| | Scheme X | Scheme Y | Scheme Z |
|---|---|---|---|
| Date of Investment | 1-10-2014 | 1-1-2015 | 1-3-2015 |
| Amount of Investment (₹) | 15,00,000 | 7,50,000 | 2,50,000 |
| Net Asset value at entry date | ₹ 12.50 | ₹ 36.25 | ₹ 27.75 |
| Dividend received up to March 31, 2015 | ₹ 45,000 | ₹ 12,500 | Nil |
| Net Asset value as at March 31, 2015 | ₹ 12.25 | ₹ 36.45 | ₹ 27.55 |

What will be the effective yield (per annum basis) for each of the above three schemes upto 31st March 2015 ?

Marks

(c) PQR Ltd. has credit sales of ₹ 165 crores during the financial year 2014-15 and its average collection period is 65 days. The past experience suggests that bad debt losses are 4.28% of credit sales. 6

Administration cost incurred in collection of its receivables is ₹ 12,35,000 p.a. A factor is prepared to buy the company's receivables by charging 1.95% commission. The factor will pay advance on receivables to the company at an interest rate of 16% p.a. after withholding 15% as reserve.

Estimate the effective cost of factoring to the company assuming 360 days in a year.

(d) The following information is collected from the annual reports of J Ltd : 4

| | |
|---|---|
| Profit before tax | ₹ 2.50 crore |
| Tax rate | 40 percent |
| Retention ratio | 40 percent |
| Number of outstanding shares | 50,00,000 |
| Equity capitalization rate | 12 percent |
| Rate of return on investment | 15 percent |

What should be the market price per share according to Gordon's model of dividend policy ?

Marks

2. (a) Mr. Shyam is holding the following securities : 8

| Particulars of Securities | Cost ₹ | Dividend Interest ₹ | Market Price ₹ | Beta |
|---|---|---|---|---|
| Equity shares : | | | | |
| Gold Ltd. | 10,000 | 1,725 | 9,800 | 0.6 |
| Silver Ltd. | 15,000 | 1,000 | 16,200 | 0.8 |
| Bronze Ltd. | 14,000 | 700 | 20,000 | 0.6 |
| GOI Bonds | 36,000 | 3,600 | 34,500 | 1.0 |

Average return of the portfolio is 15.7%.

Using Average Beta, Calculate :

(i) Expected rate of return in each case, using the Capital Asset Pricing Model (CAPM)

(ii) Risk free rate of return

(b) On 31st March, 2013, the following information about Bonds is available : 8

| Name of Security | Face Value ₹ | Maturity Date | Coupon Rate | Coupon Date(s) |
|---|---|---|---|---|
| Zero coupon | 10,000 | 31st March, 2023 | N.A. | N.A. |
| T-Bill | 1,00,000 | 20th June, 2013 | N.A. | N.A. |
| 10.71% GOI 2023 | 100 | 31st March, 2023 | 10.71 | 31st March |
| 10% GOI 2018 | 100 | 31st March, 2018 | 10.00 | 31st March & 31st October |

**Calculate :**

(i) If 10 years yield is 7.5% p.a., what price the Zero Coupon Bond would fetch on 31st March, 2013 ?

Marks

(ii) What will be the annualized yield if the T-Bill is traded @ 98500 ?

(iii) If 10.71% GOI 2023 Bond having yield to maturity is 8%, what price would it fetch on April 1, 2013 (after coupon payment on 31st March) ?

(iv) If 10% GOI 2018 Bond having yield to maturity is 8%, what price would it fetch on April 1, 2013 (after coupon payment on 31st March) ?

3. (a) R Ltd. and S Ltd. are companies that operate in the same industry. The financial statements of both the companies for the current financial year are as follows : **8**

**Balance Sheet**

| Particulars | R Ltd. (₹) | S Ltd. (₹) |
|---|---|---|
| **Equity & Liabilities** | | |
| *Shareholders Fund* | | |
| Equity Capital (₹ 10 each) | 20,00,000 | 16,00,000 |
| Retained earnings | 4,00,000 | – |
| *Non-current Liabilities* | | |
| 16% Long term Debt | 10,00,000 | 6,00,000 |
| *Current Liabilities* | 14,00,000 | 8,00,000 |
| **Total** | **48,00,000** | **30,00,000** |
| **Assets** | | |
| Non-Current Assets | 20,00,000 | 10,00,000 |
| Current Assets | 28,00,000 | 20,00,000 |
| **Total** | **48,00,000** | **30,00,000** |

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**Income Statement**

| Particulars | R Ltd. (₹) | S Ltd. (₹) |
|---|---|---|
| A. Net Sales | 69,00,000 | 34,00,000 |
| B. Cost of Goods sold | 55,20,000 | 27,20,000 |
| **C. Gross Profit (A-B)** | 13,80,000 | 6,80,000 |
| D. Operating Expenses | 4,00,000 | 2,00,000 |
| E. Interest | 1,60,000 | 96,000 |
| **F. Earnings before taxes [C-(D+E)]** | 8,20,000 | 3,84,000 |
| G. Taxes @ 35% | 2,87,000 | 1,34,400 |
| H. Earnings After Tax (EAT) | 5,33,000 | 2,49,600 |

**Additional Information :**

| | | |
|---|---|---|
| No. of equity shares | 2,00,000 | 1,60,000 |
| Dividend Payment Ratio (D/P) | 20% | 30% |
| Market price per share | ₹ 50 | ₹ 20 |

Assume that both companies are in the process of negotiating a merger through exchange of Equity shares :

You are required to :

(i) Decompose the share price of both the companies into EPS & P/E components. Also segregate their EPS figures into Return On Equity (ROE) and Book Value / Intrinsic Value per share components.

(ii) Estimate future EPS growth rates for both the companies.

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(iii) Based on expected operating synergies, R Ltd. estimated that the intrinsic value of S Ltd. Equity share would be ₹ 25 per share on its acquisition. You are required to develop a range of justifiable Equity Share Exchange ratios that can be offered by R Ltd. to the shareholders of S Ltd. Based on your analysis on parts (i) and (ii), would you expect the negotiated terms to be closer to the upper or the lower exchange ratio limits and why ?

(b) Following are the details of a portfolio consisting of three shares : 8

| Share | Portfolio weight | Beta | Expected return in % | Total variance |
|---|---|---|---|---|
| A | 0.20 | 0.40 | 14 | 0.015 |
| B | 0.50 | 0.50 | 15 | 0.025 |
| C | 0.30 | 1.10 | 21 | 0.100 |

Standard Deviation of Market Portfolio Returns = 10%

You are given the following additional data :

Covariance (A, B) = 0.030

Covariance (A, C) = 0.020

Covariance (B, C) = 0.040

Calculate the following :

(i) The Portfolio Beta

(ii) Residual variance of each of the three shares

(iii) Portfolio variance using Sharpe Index Model

(iv) Portfolio variance (on the basis of modern portfolio theory given by Markowitz)

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4. (a) A manufacturing unit engaged in the production of automobile parts is considering a proposal of purchasing one of the two plants, details of which are given below : 7

| Particulars | Plant A | Plant B |
|---|---|---|
| Cost | ₹ 20,00,000 | ₹ 38,00,000 |
| Installation charges | ₹ 4,00,000 | ₹ 2,00,000 |
| Life | 20 years | 15 years |
| Scrap value after full life | ₹ 4,00,000 | ₹ 4,00,000 |
| Output per minute (units) | 200 | 400 |

The annual costs of the two plants are as follows :

| Particulars | Plant A | Plant B |
|---|---|---|
| Running hours per annum | 2,500 | 2,500 |
| Costs : | (in ₹) | (in ₹) |
| Wages | 1,00,000 | 1,40,000 |
| Indirect materials | 4,80,000 | 6,00,000 |
| Repairs | 80,000 | 1,00,000 |
| Power | 2,40,000 | 2,80,000 |
| Fixed Costs | 60,000 | 80,000 |

Marks

Will it be advantageous to buy Plant A or Plant B ? Substantiate your answer with the help of comparative unit cost of the plants. Assume interest on capital at 10 percent. Make other relevant assumptions :

**Note :** 10 percent interest tables

| | 20 years | 15 years |
|---|---|---|
| Present value of ₹ 1 | 0.1486 | 0.2394 |
| Annuity of ₹ 1 (capital recovery factor with 10% interest) | 0.1175 | 0.1315 |

(b) An importer booked a forward contract with his bank on 10th April for USD 2,00,000 due on 10th June @ ₹ 64.4000. The bank covered its position in the market at ₹ 64.2800. 9

The exchange rates for dollar in the interbank market on 10th June and 20th June were :

| | 10th June | 20th June |
|---|---|---|
| Spot USD 1 = | ₹ 63.8000/8200 | ₹ 63.6800/7200 |
| Spot/June | ₹ 63.9200/9500 | ₹ 63.8000/8500 |
| July | ₹ 64.0500/0900 | ₹ 63.9300/9900 |
| August | ₹ 64.3000/3500 | ₹ 64.1800/2500 |
| September | ₹ 64.6000/6600 | ₹ 64.4800/5600 |

Marks

Exchange Margin 0.10% and interest on outlay of funds @ 12%. The importer requested on 20th June for extension of contract with due date on 10th August.

Rates rounded to 4 decimal in multiples of 0.0025.

On 10th June, Bank Swaps by selling spot and buying one month forward.

**Calculate :**

(i) Cancellation rate

(ii) Amount payable on $ 2,00,000

(iii) Swap loss

(iv) Interest on outlay of funds, if any

(v) New contract rate

(vi) Total Cost

5. (a) Bank 'R' was established in 2005 and doing banking in India. The bank is facing DO OR DIE situation. There are problems of Gross NPA (Non Performing Assets) at 40% & CAR/CRAR (Capital Adequacy Ratio / Capital Risk Weight Asset Ratio) at 4%. The net worth of the bank is not good. Shares are not traded regularly. Last week, it was traded @ ₹ 8 per share. **11**

RBI Audit suggested that bank has either to liquidate or to merge with other bank.

Bank 'P' is professionally managed bank with low gross NPA of 5%. It has Net NPA as 0% and CAR at 16%. Its share is quoted in the market @ ₹ 128 per share. The board of directors of bank 'P' has submitted a proposal to RBI for take over of bank 'R' on the basis of share exchange ratio.

The Balance Sheet details of both the banks are as follows :

| | **Bank 'R'** Amt in ₹ lacs | **Bank 'P'** Amt in ₹ lacs |
|---|---|---|
| Paid up share capital | 140 | 500 |
| Reserves & Surplus | 70 | 5,500 |
| Deposits | 4,000 | 40,000 |
| Other liabilities | 890 | 2,500 |
| **Total Liabilities** | **5,100** | **48,500** |
| Cash in hand & with RBI | 400 | 2,500 |
| Balance with other banks | – | 2,000 |
| Investments | 1,100 | 15,000 |
| Advances | 3,500 | 27,000 |
| Other Assets | 100 | 2,000 |
| **Total Assets** | **5,100** | **48,500** |

Marks

It was decided to issue shares at Book Value of Bank 'P' to the shareholders of Bank 'R'. All assets and liabilities are to be taken over at Book Value.

For the swap ratio, weights assigned to different parameters are as follows :

| | |
|---|---|
| Gross NPA | 30% |
| CAR | 20% |
| Market Price | 40% |
| Book Value | 10% |

(a) What is the swap ratio based on above weights ?

(b) How many shares are to be issued ?

(c) Prepare Balance Sheet after merger.

(d) Calculate CAR & Gross NPA % of Bank 'P' after merger.

(b) DEF Ltd. has imported goods to the extent of US$ 1 crore. The payment terms are 60 days interest-free credit. For additional credit of 30 days, interest at the rate of 7.75% p.a. will be charged. **5**

The banker of DEF Ltd. has offered a 30 days loan at the rate of 9.5% p.a. Their quote for the foreign exchange is as follows :

| | |
|---|---|
| Spot rate INR/US$ | 62.50 |
| 60 days forward rate INR/US$ | 63.15 |
| 90 days forward rate INR/US$ | 63.45 |

Which one of the following options would be better ?

(i) Pay the supplier on 60$^{th}$ day and avail bank loan for 30 days

(ii) Avail the supplier's offer of 90 days credit

Marks

6. (a) R Ltd., requires a machine for 5 years. There are two alternatives either to take it on lease or buy. The company is reluctant to invest initial amount for the project and approaches their bankers. Bankers are ready to finance 100% of its initial required amount at 15% rate of interest for any of the alternatives. **8**

Under lease option, upfront Security deposit of ₹ 5,00,000/- is payable to lessor which is equal to cost of machine. Out of which, 40% shall be adjusted equally against annual lease rent. At the end of life of the machine, expected scrap value will be at book value after providing depreciation @ 20% on written down value basis.

Under buying option, loan repayment is in equal annual installments of principal amount, which is equal to annual lease rent charges. However in case of bank finance for lease option, repayment of principal amount equal to lease rent is adjusted every year, and the balance at the end of $5^{th}$ year.

Assume Income tax rate is 30%, interest is payable at the end of every year and discount rate is @ 15% p.a. The following discounting factors are given :

| **Year** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Factor** | 0.8696 | 0.7562 | 0.6576 | 0.5718 | 0.4972 |

Which option would you suggest on the basis of net present values ?

Marks

(b) There are two Mutual Funds viz. D Mutual Fund Ltd. and K Mutual Fund Ltd. Each having close ended equity schemes. 8

NAV as on 31-12-2014 of equity schemes of D Mutual Fund Ltd. is ₹ 70.71 (consisting 99% equity and remaining cash balance) and that of K Mutual Fund Ltd. is ₹ 62.50 (consisting 96% equity and balance in cash).

Following is the other information :

| Particulars | Equity schemes | |
|---|---|---|
| | D Mutual Fund Ltd. | K Mutual Fund Ltd. |
| Sharpe Ratio | 2 | 3.3 |
| Treynor Ratio | 15 | 15 |
| Standard deviation | 11.25 | 5 |

There is no change in portfolios during the next month and annual average cost is ₹ 3 per unit for the schemes of both the Mutual Funds.

If Share Market goes down by 5% within a month, calculate expected NAV after a month for the schemes of both the Mutual Funds.

For calculation, consider 12 months in a year and ignore number of days for particular month.

Marks

7. Write short notes on any **four** of the following : **4×4 =16**

(a) Explain the meaning of the following relating to Swap transactions :

(i) Plain Vanila Swaps

(ii) Basis Rate Swaps

(iii) Asset Swaps

(iv) Amortising Swaps

(b) Distinction between Open ended schemes and Closed ended schemes

(c) State any four assumptions of Black Scholes Model

(d) Give the meaning of Caps, Floors and Collar options with respect to Interest.

(e) Global depository receipts

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