Answers to questions are to be given only in English
Question No. 1 is compulsory
Candidates are required to answer any four questions from the remaining five questions.
Working notes should form part of the answer.

Q1. (a) 3 years ago, Mohit Ltd. had issued a 10% Bond having Face Value ₹1,000. Today the Bond is trading at a YTM of 12.3%. It is expected to redeem at 5% Premium and has 7 years left from today till maturity. Ms. Riya (an investor) has a minimum required return of 11.5%. She approaches you for advice. You are required to:

　i. Calculate the Theoretical/ Intrinsic Value of the Bond for her.
　ii. Calculate the Actual Current Market Price of the Bond today.
　iii. Calculate the Current Yield.
　iv. Should she accept the Bond today? **(8 Marks)**

(b) Mr. Viki on 1.10.2017, during the initial offer of Neha Mutual Fund invested in 20,000 units having face value of ₹ 100 for each unit. On 31.3.2018 the dividend operated by the M.F. was 5% and Mr. Viki found that his annualized yield was 112.34%. On 31.03.2019, 15% dividend was given. On 31.3.2020 Mr. Viki redeemed all his balance of 23,012.22 units when his annualized yield was 79.52%. What are the NAV as on 31.3.2018, 31.03.2019, and 31.3.2020? **(8 Marks)**

(c) What is an equity curve out? How does it differ from a spin off?

(4 Marks)

Q2. (a) Abhishek wishes to invest in equity shares. He recently attends a seminar on Valuation of Equity Shares using Dividend Discount Model (Gordon' Constant growth model). He is unsure however which company's share to pick and therefore approaches Hiral Equity Consultants (HEC) for advice.

You are a financial consultant at HEC, assigned to assist Abhishek in his investments. Abhishek expresses his desire to invest in the shares of Delta Ltd., which are currently trading at ₹154. On analysis of the share and its financials, you realize that Last year Dividend per share was ₹24 and the expected Dividend growth rate for the coming years would be:

1st 2 Years	6% p.a.
Next 3 Years	8% p.a.
Thereafter till perpetuity	9% p.a.

You ask Abhishek what his minimum required rate of return is; he is clueless about the same and says that he never thought about it. You therefore decide to apply the Capital Asset Pricing Model (CAPM) to help him understand his required return. On further analysis, you find out the following:

GOI Bonds Interest Rate	5% p.a.
Average Market Return	15% p.a.
Beta of Delta Ltd.	1.7 times

Calculate the following:

i. What should be the minimum required rate of return for Abhishek, using CAPM?

ii. Calculate the Intrinsic Value of the Share.

iii. Would you advise Abhishek to purchase the share? **(10 Marks)**

(b) A Mutual Fund having 500 units has shown its NAV of ₹ 28.13 and ₹ 35.56 at the beginning & at the end of the year respectively. The Mutual Fund has given two options:

i. Pay ₹ 3.45 per unit as dividend and ₹ 2.87 per unit as a capital gain, or

ii. These distributions are to be reinvested at an average NAV of ₹ 31.70 per unit.

What difference it would make in terms of return available and which option is preferable? **(6 Marks)**

(c) What is take over by reverse bid or reverse merger? **(4 Marks)**

Q3. (a) The returns on stock A and market portfolio for a period of 6 years are as follows:

Year	Kunal Ltd. (%)	Return on market portfolio (%)
1	12%	4%
2	15%	8%
3	(4%)	1%
4	23%	16%
5	14%	11%

You are required to determine:

i. Calculate Beta for Kunal Ltd.

ii. Determine the Characteristic Market Line. **(8 Marks)**

(b) At 11:30 am today (12/07/2020), Princess Siara goes long on 2 lots of 3 month Futures Contracts of Gopal Ltd., which have 2 months left for maturity. Each lot contains 100 shares. Each share is trading today for ₹500. Risk Free Rate of Return is 12% p.a.

i. Calculate the Futures Price for each share (assuming the intrinsic value of Futures is same as its actual value)

ii. Following are the closing Futures Prices for each day for the coming 10 days, at the end of which Princess Siara closes off her position. Calculate Daily Gain/Loss for Princess Siara. Assume each contract requires an Initial Margin of ₹10,000 and Maintenance margin is ₹3,000. Fill in the Blanks:

Day	Futures Prices per share (₹) (at day end	Daily Gain (loss) ($)	Cum. gain (loss) ($)	Margin Account Balance ($)	Margin Call ($)
1 (Today end)	550				
2	570				
3	420				
4	450				
5	600				
6	700				
7	1000				
8	540				
9	500				
10	900				

(8 Marks)

(c) What do you mean by Pitch Presentation in context of Startup   Business? Explain any four points.

(4 Marks)

Q4. (a) Advik Ltd trades in Copper Pots. Following information is available in the futures market on Copper Pots (10 kg each) –

Particulars	₹
Current Spot Price	10,000 per pot
Storage Cost (₹ per 5kg per 6 months, payable at the end of each 6 months period)	₹200
12-Month's Futures Contract Rate (100 kg)	₹1,20,000

Risk-free interest rate is at 10% p.a.

i. Calculate the Intrinsic/ Theoretical Value of one Futures Contract of Copper Pots.

ii. Are the Futures overvalued or undervalued?

iii. Is there any arbitrage opportunity? If yes, what is the arbitrage gain if you trade in 2 Futures contracts? **(8 Marks)**

(b) Sourav is a Bengali Manufacturer, who produces in wooden cricket bats. He purchases wood and other materials from Steve Ltd. in Australia and sells cricket bats to Pollock Bat Traders in South Africa. He has just received an order for 500 bats, which have to be delivered in coming 6 months. Selling Price per bat is 5,00,000 South African Rand. Wood and other materials are purchased @ 200 Australian Dollars per bat, which will have to be purchased and paid for today itself. On the other hand, the customer is willing to pay upfront today itself – 25% of consignment value; remaining 75% will be paid after 6 months at the time of delivery.

Sourav's Foreign Exchange Dealer quotes the following rates today:

SPOT RATES:

1 AUD = INR 30

1 USD = INR 80

1 USD = ZAR 956

6m FORWARD RATES:

1 AUD = INR 32

1 USD = INR 75

1 USD = ZAR 978

You are required to calculate:

i. Between USD and INR, what is the annualized appreciation/ depreciation in USD?

ii. Calculate the Profit/ Loss to Sourav (in INR) at the end of 6 months period, assuming opportunity cost of capital is 10% p.a. **(8 Marks)**

(c) Mr. Jigar holds 10,000 shares of Manali Ltd. @ 1107.09 when 2 month Index Future was trading @ 2904.16. The share has a Beta (β) of 1.7. How many Index Futures should he short to perfectly hedge his position? A single Index Future has a lot size of 50.

Justify your result in the following cases:

i. When the Index Futures rise by 1%

ii. When the Index Futures drop by 2%.

(4 Marks)

Q5. (a) Consider the following information with regards to a call option on the stock of Pino Ltd.

Details	Price
Current Share Price	₹ 80
Exercise Price	₹ 75
Time Period	6 months
Standard Deviation	0.40
Risk Free Rate	12%
Given	
Number of SD from Mean (z)	Area of the left or right (one tail)
0.25	0.4013
0.30	0.3821
0.55	0.2912
0.60	0.2743
$e^{0.12 \times 0.5}$	1.062
ln 1.0667	0.0646

Compute the value of the call using Black-Scholes model. **(8 Marks)**

(b) Ojas Ltd. a technology driven company is considering a project in Singapore. It will involve an initial investment of SGD 3,00,000 and will have 5 years of life. Today, Spot Rate is ₹ 24 per SGD. The risk free rate in Singapore is 6% and the same in India is 10%. Cash inflows from the project are as follows:

Year	Cash Receipts	Cash Expenses
1	SGD 1,00,000	SGD 40,000
2	SGD 1,50,000	SGD 60,000
3	SGD 2,30,000	SGD 75,000
4	SGD 3,00,000	SGD 1,13,000
5	SGD 2,70,000	SGD 1,21,000

Salvage Value of the Project as a whole at the end of life is expected to be SGD 1,20,000. Calculate the NPV of the project using home currency approach, assuming SLM Depreciation, tax rate of 20% and required rate of return on this project is 12%.

(8 Marks)

(c) Explain synergy in the context of Mergers and Acquisitions

(4 Marks)

Q6. (a) It is now July 1. In two months' time on September 1, Bhanarkar Ltd will need to borrow ₹40 lakhs for three months. Bhanarkar Ltd. can currently borrow at 7% p.a., but its treasurer fears an increase in interest rate after two months and hence wishes to hedge using Interest Rate Futures. October three month Interest Rate Futures are currently priced at ₹92.5. The Standard Lot Size in the Futures Market is 5 lakhs.

    i. What strategy should the treasurer adopt to hedge the Interest Rate if he decides to use Interest Rate Futures to hedge its risk?

    ii. If on September 1, the Futures are priced at 90 and Interest Rate increases to 9.5%, what would be the effective interest cost paid by Frog Ltd due to adoption of this strategy?

    iii. If on September 1, the Futures are priced at 95.25 and Interest Rate decreases to 5.5%, what would be the effective interest cost paid by Frog Ltd due to adoption of this strategy?

(8 Marks)

(b) Shivansh has the following five stocks in his portfolio –

Security	No. of shares	Price/Share	Beta
Kunal Ltd.	10,000	₹200	1.2
Charmi Ltd.	20,000	₹345	2.3
Dilip Ltd.	5,000	₹567	0.8
Geeta Ltd.	15,000	₹120	1.7
Neha Ltd.	7,500	₹56	2.9

i. Compute portfolio beta.

ii. If Shivansh wants to reduce the beta to 0.7, how much of risk free investment should he bring in (without selling existing shares)? What will be the new portfolio?

iii. Suppose Nifty futures are trading at is 8,250 points and have a contract multiplier of 100, how can he obtain the same position as in (ii) by dealing in Nifty futures?

(8 Marks)

(c) Explain some of the sources for funding a startup.

(4 Marks)