INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Mid-Spring Semester Examination 2022-23

Date of Examination: 16 February 2023 **Session:** (FN/AN) AN **Duration:** 2 hrs. **Full Marks:** 60

Subject No.: BM40002 **Subject:** Introduction to Financial Management

Department/Center/School: Vinod Gupta School of Management

Specific charts, graph paper, log book etc., required

Special Instructions (if any): **If necessary, make and state suitable assumptions without waiting for clarification.**

Question # 1

On January 01, 2023, Sumantra and Anamika started a consulting business (S&A Consultant) as a partnership firm contributing ~~Rs.3,00,000~~ each as capital. Convinced with the potential of their consulting business, Pooja Bank disbursed a loan of ~~Rs.~~2,00,000 on January 01, 2023. The loan carries 12% interest and repayable in equal monthly installments (EMI) over two years. The EMI to start from 31st January 2023. During the month of January 2023, the following transactions also took place.

a) 01 Jan: Appointed a staff for a monthly salary of Rs.10,000
b) 01 Jan: Took an office space on rent of Rs.5,000 per month. Three months' rent paid as deposit.
c) 02 Jan: Bought furniture worth Rs.20,000.
d) 05 Jan: Bought office stationeries worth Rs.12,000
e) 07 Jan: Visited clients' establishment and spent Rs.1000 as conveyance and other expenses.
f) 08 Jan: Provided services to Client and received Rs.20,000 for the same.
g) 09 Jan: Bought laptop for Rs.30,000 for cash. [Expected life of laptop: 5 years; salvage value at the end of 3rd year: Rs.6,000]
h) 11 Jan: Billed clients for services, Rs.25,000
i) 15 Jan; Celebrated Independence Day in office and spent Rs.3,000 regarding the same
j) 18 Jan: Paid for client visit related expenses, Rs.3,000
k) 25 Jan: Bought a photocopier for Rs.40,000 [Expected life of the photocopier: 4 years; salvage value at the end of 4th year: Rs.4,000]
l) 27 Jan: Received 60% of the amount due from the client regarding services provided on 11 Jan.
m) 31 Jan: paid electricity expenses, Rs.3,000 and telephone bill Rs.2,000.
n) 31 Jan: Paid office rent and salaries to staff
o) 31 Jan: Paid the first EMI on loan

On 31 Jan, it was found that Rs.3,000 worth stationeries were left and the same can be used in February, 2023.

i. Analyze the effect of the transactions on the accounting equation (in a tabular format as below)

			Assets*				Equity and Liabilities*		
Date	Transaction Reference#	Nature of Cash flow	??	??	??	??	??	??	??

* Create as many columns as necessary

Mention **only** a, b, c, etc. as given in the question above. However, for any transaction other than those listed above, do elaborate the transaction.

ii. Prepare S&A Consultant's Income Statement for the month of January 2023 and Balance Sheet as on 31st January 2023.

iii. Prepare the S&A Consultant's Cash Flow Statement for the month of January 2023.

[12+6+4=22 Marks]

Question # 2

Mr. Aziz is going to retire exactly 30 years from today. He wants to plan for 20 years after retirement. On the day of retirement he will like to have Rs.10 lakh and from the next year onwards with 5% growth per annum (for the next 19 years). How much Mr. Aziz should save per month for the next 30 years, if the return on the savings that can be earned in pre and post retirement is 12% per annum? He will start saving from today onwards.

[5 Marks]

Question # 3

Vishal and Company just paid a dividend of Rs.3.00 per share. The company will increase its dividend by 20 percent next year and will then reduce its dividend growth by 5 percentage points per year until it reaches the industry average of 5 percent dividend growth, after which the company will keep a constant growth rate forever. If the stock has a beta of 1.2, return on market and risk free rate of return are 15% and 7% respectively, what will a share of Vishal and Company sell for today?

[5 Marks]

Question # 4

Explain the following with example:

a. Business Entity Concept

b. Matching Concept

c. Accrual Concept

[3 x 3 = 9 Marks]

Question # 5

2034

A philanthropist promises an annual award for the best student in the IIT UG program. The first award of Rs. 100,000 will be paid out on 31st Dec. 2024. The money for the awards will come out of a lump sum invested by the philanthropist in a single bank account on 31st Dec. 2023. The bank currently pays an annual interest of 7% on this account.

a) Based on the assumption that the 7% rate will remain constant over time, calculate the minimum amount the philanthropist needs to invest in the bank in order to provide for these awards in perpetuity.

b) The advisor of the award committee suggested that the awards will increase by 3% every year to compensate for inflation. What should be the lump-sum investment if this is to be considered?

c) The philanthropist invests the minimum necessary amount (as calculated **from part a**) in the bank on 31st Dec. 2023. Unfortunately, a financial crisis hits the country a decade later, so the bank's annual interest credits drop to a 2% per year rate on Jan. 1, 2024 and stays there indefinitely thereafter. For how many years can the originally promised awards be paid out after ~~2037~~ 2034?

[2+2+6 = 10]

Question # 6

Mr. Sharad - a second year student of IIT - is in dilemma after the recent tuition fee hike. He has planned his finances the following way. He would pay an annual fee of Rs. 90,000 for four years. Given the trends, on graduation, he was expecting to get a job that would pay him Rs. 450,000 per annum. Assuming a constant annual salary for next 35 years, his return-on-investment (ROI) multiple would be 15.65 times in the year of graduation (in present value terms).

If the tuition fee is raised to Rs. 300,000 per annum, how would it impact the ROI multiple, given other things same?

[*Hint*: Borrowing as well as lending rates are at 6% p.a.; the tuition fees are paid at the beginning of every year, however, salary is credited at the end of the year; there is no growth rate or inflation in the economy.]

[5]

Question # 7

(a) 5-year, 8.50 percent coupon paying bond, with face value Rs.1000/-, is trading at 8.75percent. Estimate its duration. If the YTM increases by 1 percent, what would be the percentage gain/loss?

(b) A company retains 60 percent of its earnings, which are currently Rs.5 per share. Its investment opportunities promise a return of 15 percent. What price should be paid for the share if the required rate of return is 13 percent? What is the value of growth opportunities? What is the expected rate of return from the share if its current market price is Rs.60/-?

[2+2 = 4]

End of the Questions