STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.
(For candidates admitted during the academic year 2019– 2020 and thereafter)

B.COM (A&F). DEGREE EXAMINATION NOVEMBER 2024
ACCOUNTING AND FINANCE
FIFTH SEMESTER

COURSE : MAJOR – CORE
PAPER : SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT
SUBJECT CODE : 19AF/MC/SP54
TIME : 3 HOURS MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS: (10 x 2 = 20)

1. Define Portfolio Management.
2. What are the main components of returns?
3. State the assumptions of Sharpe's Single Index Model.
4. What is constant growth dividend?
5. What are the core principals of technical analysis?
6. Differentiate between Strategic and Tactical asset allocation (Any 2).
7. Evaluate the performance of the portfolio based on Sharpe Ratio and Treynor's ratio.
   (a) portfolio I: $R_P = 50\%$, $\sigma_P = 25\ \%$, $R_M = 30\%$, $\sigma_M = 20\%$, $I_{RF} = 10\%$
   (b) portfolio II: $R_P = 50\%$, $\beta_P = 1.2$, $R_M = 30$, $\beta_M = 1$, $I_{RF} = 10\%$

8. Following information is available in respect of three securities A, B and C.

Security	Return, $\bar{r}$	Risk, σ
A	28%	30%
B	20%	22%
C	20%	25%

   Calculate coefficient of variation of these securities. How would an investor select a security?

9. A Rs. 5000 bonds with 10% coupon rate matures in 8 years and currently sells at 97%. Is this bond a desirable investment for an investor whose required rate of return is 11%.

10. Net profit for the year 2020 is Rs. 18 lakhs. Net profit for the year 2021 is Rs. 60 lakhs. Number of equities shares outstanding till 30-09-2020 is 20 lakhs. Bonus issue on 01-10-2021 = 2 (new): 1(old). Calculate EPS for the year 2021 and adjusted EPS for the year 2020.

SECTION – B

ANSWER ANY FIVE QUESTIONS: (5 x 8 = 40)

11. Explain systematic and unsystematic risk.
12. What is the Dow theory? Explain the three assumption of Dow theory.

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13. XYZ Ltd. Has investment in 3 companies A Ltd., B Ltd., and C Ltd. Following information is available in respect of these investments:

Company	Investment	Beta
A Ltd	600000	1.3
B Ltd	300000	1.4
C Ltd	100000	0.9

Expected return on the market portfolio is 15% and the risk – free rate of interest is 6%. Find out the expected β and return of the portfolio.

14. Market price Rs. 107
Face value is Rs.100
Coupon Rate is 12%
Date of purchase 1-1-12
Maturity date 31-12-17
Callable on 1-1-14
Interest is payable annually
Maturity / callable value is Rs 105.
Calculate YTC of the bond.

15. An investor is evaluating two investment options. Both have equal returns but the probabilities of occurring these returns in two proposals are different. The returns and probabilities are:

Return	Prob. X	Prob. Y
13%	0.1	0.1
16%	0.2	0.4
22%	0.3	0.3
25%	0.4	0.2

Find out the expected return from both proposals. Also evaluate the risk of these returns.

16. A company is paying a dividend of Rs. 2 per share. The rate of dividend is expected to grow at 5% for the first four years and 6% thereafter infinitely. Find out the value of share if the required rate of return of the investor is 14%.

17. Following information is available in respect of 5 portfolio:

Portfolio	Expected Return	Standard Deviation
I	13%	8
II	10%	6
III	17%	13
IV	8%	3
V	20%	18

The risk – free rate is 6%. Which portfolio is best in terms of expected return? An investor opts for the best portfolio but wants to reduce the risk of 4 even if the return in reduced to 10%. Is it possible?

SECTION – C

ANSWER ANY TWO QUESTIONS: (2 x 20 = 40)

18. An investor is interested to construct a portfolio of two investment, S_1 and S_2. He has gathered the following information about these investments:

	S_1	S_2
Expected return	12%	20%
Standard deviation of return	10%	18%

Coefficient correlation between S1 and S2 as follows:

i) All funds invested in S_1
ii) 50% of fund invested in each S_1 and S_2
iii) 75% of fund in S_1 and 25% in S_2
iv) 25% of fund in S_1 and 75% in S_2
v) All funds invested in S_2

Find out (1) expected return under different portfolios, (2) risk factors associated with these portfolios, (3) which portfolio is best for him from the point of risk, and (4) which portfolio is best for him from point view of return.

19. The following data are furnished with regards to a firm.
Earnings per share Rs. 10
Capitalization rate = 20%
Find out the market price of the share under different rate of return, r, of 10%, 20% and 30% for different payout ratios of 0%, 40%, 80% and 100%.

20. Following information is available in respect of five securities:

Security	Expected Return	β	σ^2_{ei}
I	14	1.5	10
II	9	1.0	20
III	8	0.8	10
IV	12	1.5	20
V	15	1.0	30

Construct an optimal portfolio as per Sharpe Optimization Model given that Risk-Free Rate, I_{RF}, is 5% and the variance of the market, $\sigma_M^2 = 10$.

21. Financials of VG Ltd. Are given below: (Rs. In millions)

Particulars	2011	2012	2013	2014
Net sales	250	290	345	480
Cost of goods sold	190	222	270	378
Gross profit	60	68	75	102
Operating expenses	15	18	20	28
Operating profit	45	50	55	74
Non-operating surplus/deficit	5	8	9	6
PBIT	50	58	64	80
Interest	15	18	20	24
PBT	35	40	44	56
Tax	9	11	12	14
PAT	26	29	32	42
Dividends	10	12	12	16
Retained earnings	16	17	20	26

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Equity share capital (Rs. 5 par)	80	80	80	120
Reserves and surplus	40	57	77	63
Shareholder's fund	120	137	157	183
Loan funds	60	63	73	90
Capital employed	180	200	230	273
Net fixed assets	105	128	150	195
Investments	10	12	15	5
Net current assets	65	60	65	73
Total assets	180	200	230	273
Market price per share (end of the year)	Rs.17.50	21.00	24.5	24.2

*Bonus shares were issued in the ratio 1:2

a) Calculate the following for last four years: Return on equity, Book value per share, EPS, Bonus Adjustment factor, Adjusted EPS, PE Ratio (Prospective), PB Ratio (Retrospective), Retention Ratio.
b) Calculate the CAGR of sales, CAGR of EPS and Volatility of ROE.
c) Calculate the sustainable growth rate based on the average retention ratio and average return on equity for the past 3 years.
d) Decompose the ROE for the last two years in terms of five factors.

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