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Class: SYBFM
Subject: Debt Markets II
N.B.: (1) All questions are compulsory
(2) Figures to the brackets to the right indicate marks.

Total Marks: 75
Duration: 2½ Hours

Q1. (A) Fill in the blanks (Any 8): (8)

(1) Effective duration is a duration calculation for bond that have Embedded Options
(2) Hybrid bonds have the features of both Equity and Debenture.
(3) Junk bond has higher risk.
(4) Aggressive portfolio includes stocks/bonds with high risk/high return.
(5) An example of leading economic indicators include consumer expectations
(6) A bond's rating indicates its default risk
(7) A bond with a coupon of 9% when interest rates for similar maturities are 11% will sell below par
(8) An actively managed equity fund expects to be able to beat the benchmarks
(9) The duration of a 15-year zero-coupon bond is equal to 15
(10) A call provision in a debt issue allows the issuer to redeem the debt before maturity

Q1. (B) Match the following columns (Any 7): (7)

	Column A		Column B
1	YTM	a	Rate of Return
2	Price value of basis point	b	Asset Allocation
3	Valuation of Bond	c	Capital gain or losses
4	Forward Contracts	d	Dollar Value
5	Central Government Securities	e	Inverse
6	Price –yield relationship	f	Mortgage-backed securities
7	Interest rate risk	g	Not Exchange Traded
8	Sub-prime crisis	h	Present Value of Cash flows
9	Portfolio Management	i	Semi-annual coupon payments
10	Consistency of Returns	j	Objectives of Portfolio Management

Answers: 1- a, 2 - d, 3 - h, 4 - g, 5 - i, 6 - e, 7 - c, 8 - f, 9 - b, 10 - j.

Q2. (a) Define Fixed Income Securities. Explain its advantages and disadvantages. (8)
(b) What are corporate bonds? Explain issue and classification of corporate bonds. (7)

OR

Q2. (c) What are the risks associated with investing in bonds? (8)
(d) Calculate the value of a 3 year, 9% coupon bond with par value of Rs. 100 on which interest is payable semi-annually, if the required return on this bond is 12%. (7)

Solution: Bond Value = I (PVIFA 6%, 6 Yr) + MV (PVIF 6%, 6 Yr)
= 4.5(4.9174) + 100(0.7050) = 22.1283 + 70.50 = Rs. 92.6283

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Q3. (a) Explain in detail Macaulay Duration (8)

(b) What is Convexity? Explain with diagram. (7)

OR

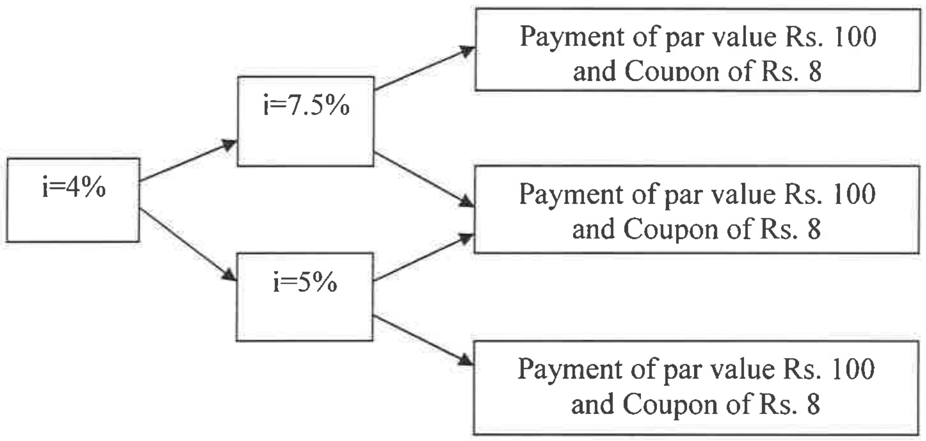
(c) Calculate Macaulay Duration of 6 year bond, carrying 6% annual coupon of face value of Rs. 1000. Interest rate is currently 6%. The bond pays coupon once in a year and pays the principal on maturity. (8)

Year	Annual Cash Flow	PV Factor	Present Value	PV x Time
1	60	0.9434	56.604	56.604
2	60	0.89	53.4	106.8
3	60	0.8396	50.376	151.128
4	60	0.7921	47.526	190.104
5	60	0.7473	44.838	224.19
6	1060	0.7050	747.3	4483.8
Sum of PV x Time				5212.626
Duration = (Sum of PV x Time)/Current Bond Price assuming Rs.1000				**5.212626**

(d) A 8% annual coupon bond has 2 years to maturity. The interest rate tree is shown in the figure below. Calculate the value of the bond today under following different scenarios if face value is Rs. 100: (7)

(i) Bond is option free

(ii) Bond has call option and call price is Rs. 100



SOLUTION:

Upper node = ½ (FV+Coupon/1+i + FV+Coupon/1+i)

=½ ((100+8/1.075) + (100+8/1.075)) =100.47

Lower node =½ ((100+8/1.05) + (100+8/1.05)) =102.86

Bond value today if bond is:

(i) Option free = ½((100.47+8/1.04) + (102.86+8/1.04)) = ½ (104.30+106.60) =105.45

(ii) Call Option= ½((100+8/1.04) + (100+8/1.04)) = ½ (103.85+103.85) =103.85

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Q4. (a) Explain the Importance of Economic Indicators. (8)
(b) Explain the impact of Sub Prime Crisis on the India Banking System. (7)

OR

Q4. (c) What is Index of Industrial Production (IIP)? Explain its significance. (7)
(d) Explain the causes of subprime crises. (8)

Q5. (a) What do you mean by Bond strategy? Explain Bond Investment Management Process.(8)
(b) What do you mean by Active Bond strategy? Explain its strategies. (7)

Q5. (c) Write Short Note (Any 5): (15)
(1) Fixed Income Market Participants
(2) Convertible bond valuation
(3) GDP and Bond Markets
(4) Bond Indexing
(5) Hybrid Bonds