

- Draw a curve between the issue price  $B_{00}$  and  $M'$  with curvature similar to the  $C_t$  curve.
- g. What would debtholders do if the bond was called at  $t = 0$ ? At  $t = 5$ ? At  $t = 6$ ?
- h. What return on investment is earned by bondholders who purchased the convertibles at par value on the date they were issued if the bonds are called in four years?

Ans: (a) Rs.  $B_0 = 726.11$ ;  $B_5 = 766.372$ ;  $B_6 = 807.46$  (b)  $CV_0 = 828$ ,  $CV_5 = 1242.80$ ;  $CV_6 = 1628.80$  (c)  $At_0 = 828$ ;  $At_5 = 1242.80$ ;  $At_6 = 1628.80$

**30. 2058 Q.No. 8 a)**

Kathmandu Pizza has outstanding warrants, where each warrants entitles the holder to purchase two shares of stock at Rs.24 per share. The market price per share of stock and market price per warrant were the following over the last year:

Observation	1	2	3	4	5	6
Stock price	Rs.20	Rs.18	Rs.27	Rs.32	Rs.24	Rs.38
Warrant price	5	3	12	20	8	29

Determine the theoretical value per warrant for each of these observations. At what price per common share is the warrant premium over theoretical value the greatest? and why? [10]

Ans: Theoretical value: Rs. -8 or 0, 0, 6, 16, 0, 28 respectively;  
Warrant price: Rs. 5, 3, 6, 4, 8, and 1 respectively

**31. 2058 Q.No. 8 b)**

The Maximin Company has current earnings of Rs 3 a share with 500,000 shares outstanding. The company plans to issue 40,000 shares of 7 percent, Rs 50 par value convertible preferred stock at par. The preferred stock is convertible into two shares of common for each preferred share held. The common stock has a current market price of Rs 21 per share.

- What is the preferred stock's conversion value?
- What is the conversion premium?
- Assuming that total earnings stay the same, what will be the effect of the issue on primary earnings per share before conversion? and on a fully diluted basis?
- If profits after taxes increase by Rs. 1 million, what will be primary earnings per share before conversion? and on a fully diluted basis? [10]

Ans: (a) Rs. 42 (b) 19.05% (c) Before = Rs. 2.72, after = 2.59

**32. 2057 Q.No. 8 a)**

Max Murphy, Inc., has warrants outstanding that allow the holder to purchase 3 shares of stock for a total of Rs.60 for each warrant. Currently, the market price per share of Max Murphy common is Rs.18. Investors hold the following probabilistic beliefs about the stock 6 months hence:

Market price per share	Rs.16	Rs.18	Rs.20	Rs.22	Rs.24
Probability	0.15	0.20	0.30	0.20	0.15

- What is the present theoretical value of the warrant?
- What is the expected value of stock price 6 months hence?
- What is the expected value of theoretical value of the warrant 6 months hence?
- Would you expect the present market price of the warrant to equal its theoretical value? If not, why not? [10]

Ans: (a) Rs. 6 or, 0 (b) Rs. 20 (c) Rs. 3 (d) Warrant is worth more than its theoretical value ... warrant expects to sell up some positive price.

**33. 2057 Q.No. 8 b)**

The common stock of the Electricity Corporation of Nepal earns Rs.2.50 per share, has a dividend payout of two-thirds, and sells at a P/E ratio of 16. The corporation wishes to offer Rs.10 million of 9 percent, 20-year convertible debentures with an initial conversion premium of 20 percent and a call price of 105. The company currently has 1 million common shares outstanding and has a 50 percent tax rate. [10]

- What is the conversion price?
- What is the conversion ratio per Rs.1,000 debenture?
- What is the initial conversion value of each debenture?
- How many new shares of common must be issued if all debentures are converted?

Ans: (a) Rs. 48 (b) 20.833 shares (c) Rs. 833.30 (d) 208,333 shares  
(e) EPS: Rs. 2.55 (before) and Rs. 2.48 (after)

## 34. 2056 Q.No. 8

The Bhairahawa Sugar Company is contemplating-raising Rs.10 million by means of a debt issue. It has the following alternatives:

- A 20-year, 8 percent convertible debenture issue with a Rs.50 conversion price and Rs.1,000 face value.
- A 20-year, 10 percent straight bond issues.

Each Rs.1,000 bond has detachable warrant to purchase four shares for Rs.50 a share. The company has a 50 percent tax rate, and its stock is currently selling at Rs.40 per share. Its earnings before interest and taxes are a constant 20 percent of its total capitalization, which currently appears as follows:

Common stock (par Rs.5)	Rs.5,000,000
Additional paid-in capital	10,000,000
Retained earnings	15,000,000
Total	Rs.30,000,000

- Show the capitalizations resulting from each alternative, both before and after conversion or exercise
- Compute primary earnings per share currently and under each of the capitalizations determined in part 1.
- If the price of the company's stock went to Rs.75, determine the theoretical value of each warrant issued under alternative b. [20]

Ans: (a) Before conversion: Debenture = 10, Common stock = 5, Paid in capital = 10, Retained earnings = 15; After conversion: Common stock = 6, Paid in capital = 19, Retained earnings = Rs. 15; Before exercise: Debenture = 10, Common stock = 5, Paid in capital = 10, Retained earnings = 15; After exercise: Debenture = 10, Common stock = 5.2, Paid in capital = 11.8; Retained earnings = 15 (b) Convertible = 3.360 and 3.33; Warrants = 3.350 and 3.56 (c) Rs. 100

## 35. 2055 Q.No. 7

The Bagmati Chemical Company's net income for 1984 was Rs.2,450,000. The company's capital stock consists of 500,000 shares of common stock, and 175,000 warrants, each good for buying two shares of common stock at Rs.25. The warrants are protected against dilution: that is, the exercise price must be adjusted downward in the event of a stock dividend or if the company sells common stock at less than the Rs.25 exercise price. On June 1, 1995, the company issued rights to buy one new share of common stock for Rs.15 for every four shares held. The market price of the company stock on June 1 was Rs.45 per share.

- Compute primary and fully diluted EPS as of December 31, 1984.
- What is the theoretical value of the rights before the stock sells ex rights?
- What is the adjusted exercise price of the warrants after the rights offering?
- Net income for 1985 is Rs.2,800,000. All of the rights and none of the warrants have been exercised. Compute primary and fully diluted EPS for 1985. [20]

Ans: (a) Rs. 2.88 (b) Rs. 6 (c) Rs. 19 (d) Rs. 4.48 and Rs 2.87

## 36. 2054 Q.No. 7 a

A convertible bond has a face value of Rs.1,000 and a 10 percent coupon rate. It is convertible into stock of Rs.50; that is, each bond can be exchanged for 20 shares. The current price of the stock is Rs.43 per share.

- If the price per share grows at 6 percent per year for five years, what will the approximate conversion value be at the end of five years?
- If dividends on the stock is presently Rs.2 per share, and if it also grows at 6 percent per year, will the bondholders convert after five years, or will they tend to hold onto their bonds? Explain.
- If the bonds are callable at a 10 percent premium, about how much would you lose per bond if the bonds were called before you converted? (Assume the same conversion value as in Part (a) above, at the end of five years.) [10]

Ans: (a) Rs. 1,150.87 (b) Will not convert (c) Rs. 50.874



**37. 2054 Q.No. 7 b**

Warrants attached to a bond entitle the bondholder to purchase one share of stock at Rs.10 per share. Compute the approximate value of a warrant if

- The market price of the stock is Rs.9 per share.
- The market price of the stock is Rs.12 per share.
- The market price of the stock is Rs.15 per share.
- Each warrant entitles you to purchase two shares at Rs.10, and the current price of the stock is Rs.15 per share.

[10]

Ans: (a) Rs. 0 (b) Rs. 2 (c) Rs. 5 (d) Rs. 10

**38. 2053 Q.No. 7**

On July 2, 1984, it was announced that the Lalitpur Brick Corporation was issuing Rs.150 million face amount of debt at Rs.500 for each Rs.1,000 face amount of securities. The debentures carry a 5% percent coupon, maturing in 2009. They are convertible until December 15, 1996, at Rs.75.64 face amount of debentures for each common share. The price of common stock closed on July 2, 1984, at Rs.32.

- How many shares of common stock would be received upon conversion?
- What is the conversion price based on the Rs.500 issuing price of the bonds?
- What percentage premium does this represent over the Rs.32 common stock price?
- What is the yield to maturity of the bonds based on the data given? (Assume semiannual compounding.)
- Assume that the common stock of the company increases in price by 10 percent per year and that the bonds sell at the higher of 12 percent above their conversion value or at their "intermediate face value", which is the Rs.500 issue price increased by 4 percent per year. Assume that for a number of reasons, a purchaser of the bonds sells the bonds at the end of ten years. Based on the higher of the two prices, what return has the investor earned? [20]

Ans: (a) 13.22 shares (b) Rs. 37.82 (c) 18.18% (d) 12.4436% (e) 17.6102%

**39. 2052 Q.No. 8**

The common stock of the SC Company (SCC) earns Rs.2 per share, has a dividend payout of two-fifths, and sells at a P/E ratio of 20. SCC wishes to offer Rs.200,000 million of 8 percent, 15-year convertible debentures with an initial conversion premium of 25 percent and a call price of 10%. SCC currently has 1 lakhs common shares outstanding and has a 40 percent tax rate.

- What is the conversion price?
- What is the conversion ratio per Rs.1,000 debenture?
- What is the initial conversion value of each debenture?
- How many new shares of common must be issued if all debentures are converted?
- If SCC can increase operating earnings by Rs.20,000 with the proceeds of the debenture issue, compute the new earnings per share and earnings retained before and after conversion.

[20]

Ans: (a) Rs. 50 (b) 20 shares (c) Rs. 800 (d) 4,000 shares  
(e) EPS: 2.02 and 2.04 RE: 121,440 and 127,200**40. 2051 Q.No. 8**

The CB Company has current earnings of Rs 3 a share with 500,000 shares outstanding. The company plans to issue 40,000 shares of 7 percent, Rs 50 par value convertible preferred stock at par. The preferred stock is convertible into two shares of common stock for each preferred share held. The common stock has a current market price of Rs 21 per share.

- What is the preferred stock's conversion value?
- What is the conversion premium?
- Assuming that total earnings stay the same, what will be the effect of the issue on earnings per share before conversion? and after full conversion

Ans: (a) Rs. 42 (b) 19.05% (c) Before = Rs. 2.72, after = 2.59

**41. 2050 Q.No. 8**

The CC Company is planning to raise Rs.25 million by selling convertible debentures. Its stock is currently selling for Rs.50 per share. The stock price is expected to grow in the future at the rate of 6 percent per year. The company's tax rate is 40 percent. Convertibles will have the

following features:

Conversion price = Rs.55.55 (i.e. conversion ratio of 18)

Coupon yield = 7% par Value = Rs.1,000

The bond is not callable for 2 years but there after the bond is callable at Rs.1,000. Investors do not expect the bond to be called unless value is Rs.1,354.

- Determine the expected yield on the bond.
- Suppose the company wanted to step up the conversion price to Rs.60 after ten years. Does it affect the expected yield?
- Suppose, contrary to investors' expectations, the company called the bonds after two years. What would be the effective yield?
- Suppose the expected yield on the convertible had been less than on the straight debt. Would this appear logical?

Ans: (a) 10.66% (b) Not affect (c) 7.5% (d) No

**42. 2048 Q.No. 8**

The BFT Company is contemplating-raising Rs.10 million by means of a debt issue. It has the following alternatives:

- A 20-year, 8 percent convertible debenture issue with a Rs.50 conversion price and Rs.1,000 face value or
- A 20-year, 10 percent straight debt issue.

Each Rs.1,000 bond has a detachable warrant to purchase four shares for Rs.50 a share. The company has a 50 percent tax rate, and its stock is currently selling at Rs.40 a share. Its earnings before interest and taxes are a constant 20 percent of its total capitalization, which currently appears as follows:

Common stock (par Rs.5)	Rs.5,000,000
Additional paid-in capital	10,000,000
Retained earnings	15,000,000
Total	Rs.30,000,000

- Show the capitalizations resulting from each alternative, both before and after conversion or exercise (a total of four capitalizations).
- Compute primary earnings per share currently and under each of the four capitalizations determined in above.

Ans: (a) Before conversion: Debenture = 10, Common stock = 5, Paid in capital = 10, Retained earnings = 15; After conversion: Common stock = 6, Paid in capital = 19, Retained earnings = Rs. 15; Before exercise: Debenture = 10, Common stock = 5, Paid in capital = 10, Retained earnings = 15; After exercise: Debenture = 10, Common stock = 5.2, Paid in capital = 11.8; Retained earnings = 15  
(b) Convertible = 3,360 and 3,33; Warrants = 3,350 and 3,56

**43. 2046 Q.No. 8**

The Pipco Ltd. Plans to issue convertible debt with a 10 percent coupon and Rs.1,000 par value. The convertible will have 15 - year life, but management hopes that figure developments will make it advantageous to call the issue at an earlier date.

- Straight debt with equal risk, coupon, and maturity is selling with a market rate of interest of 12 percent. Determine the straight debt value at time zero and at the end of years 1 and 2.
- At time zero the conversion value of bond is Rs.900 since the initial price of the common stock is Rs.90 and the conversion ratio is 10. The stock is expected to appreciate at a rate of 10 percent per year. What is the minimum prices the convertible can sell for at year 0, 1, 2, and 3 assuming the stock value increases as predicted?
- Assuming that the bond is expected to be called when the conversion value of the bond reaches 131.769 percent of par value. If the bonds sell originally at par value, in what year is the debt expected to be called? [20]

Ans: (a)  $B_0 = Rs. 864.10; 967.80, 871.40$  and  $876.10$  respectively (b)  $CV_0 = Rs. 900, 990, 990, 1,089$  and  $1,198$  respectively, minimum price =  $At_0 = 900, At_1 = Rs. 990; At_2 = 1,089; At_3 = 1,198$

**44. 2045 Q.No. 6**

A newly issued convertible debenture has a ten-year maturity. The initial price, par value and maturity value are all Rs.1,000. The company's stock sells for Rs.43.69 per share, and the expected growth rate is 4 percent. The coupon rate is 6.5 percent and the initial conversion



price is Rs.50. Bonds are callable at Rs.1,000. The tax rate is 40 percent. The firm's call policy is to call the bond when its conversion value commands a 15 percent premium over par value.

- If the firm is expected to adhere to its call policy, what is the expected yield on the bond?
- What would be the expected effective yield if the firm calls the bond in five years?
- What would be the effective yield if the bond were called in two years? [20]

Ans: (a) 8.17% (b) 7.58% (c) 6.5%

**45. 2044 Q.No. 6**

ABC company has an issue of convertible Rs.1,000 bonds outstanding. These bonds are convertible into 40 shares of common stock. The bond, which has just been issued, has a 7 percent coupon and thirty-year maturity. The interest rate on a straight bond of similar risk would be 9 percent.

- Calculate the conversion value of the bond when the market price of the common stock is Rs.15, 20, 25, 30, and 35.
- Calculate the straight bond value of this convertible.
- What is the lowest price at which the bond will sell? Explain. [20]

Ans: (a) Rs. 600, 800, 1,000, 1,200 and 1,400 (b) Rs. 794.55  
(c) higher of conversion value or straight bond value

**46. 2041 Q.No. 6**

A company has Rs.30,000,000 of 5 percent convertible bonds outstanding that have a conversion ratio of 30. The par value of bond is Rs.1,000 each. The bond value of each convertible bond is Rs.800 but the company's common stock sells for Rs.42 per share. The conversion premium of each bond is only 1 percent. In an attempt to force conversion, the company has announced its plan to call the convertible bonds in one month for Rs.1,040 per bond. The company's after tax earnings presently are Rs.26,000,000 and 5,800,000 shares of common stock are outstanding.

- What is cash convertible bond's market value?
- Is a successful force conversion likely? Explain.
- If the bonds were converted, what would be the company's earnings per share both after and before the conversion, assuming that the company is in a 45 percent tax bracket? [20]

Ans: (a) Rs. 1,272.60 (b) Yes because  $CV > CP$  (c) Before = Rs. 4.148 after Rs. 4

## 7. OPTION VALUATION

### MBS

#### THEORETICAL QUESTIONS

**1. 2069 Old Q.No. 9b**

If stock price increases, what is the effect on option value and how the sloping curve behaves? [10]

**2. 2065 Q.No. 9 b**

Explain how the Black-Scholes Option Pricing model is used for valuation of other contingent claims. 10

**3. 2061 Q.No. 8 b**

How the option value is affected if the length of time increases, risk free rate rises, exercise price and variance also increase according to Black Scholes Model? [10]

**Write short notes on:**

**4. 2062 Q.No. 6 a**

Volatility of common stock 5

#### NUMERICAL PROBLEMS

**5. 2070 Q.No. 7**

MT company is a new high-technology company whose common stock sells for Rs.23 per share. A call option exists on this stock with 3 months to expiration. It has an exercise price of Rs.18 and sells for Rs.5.30. You have made a careful study of the stock's volatility and

conclude that a standard deviation of 0.50 is appropriate for the next 3 months. Currently, the annual rate on short-term Treasury bills is 6 percent.

- Using the Black-Scholes option pricing model, is the option overvalued, undervalued, and priced just right?
- If you believe in these numbers, what would you do? [8+2]

Ans:  $V_0 = \text{Rs. } 5.65$  37; under valued; (b) buy one option and sell 0.878 shares of stock short

**6. 2070 Old Q.No. 5**

A call option enables the holder to acquire one share of stock at Rs.45 a share for each option held. The option has 6 months until its expiration. The market price of the stock is currently Rs.40 a share, and the expected standard deviation of its continuously compound return over the near future is 0.30. The short-term annual interest rate is 10 percent.

- On the basis of this information, what is the proper value of the option using Black-Scholes option-pricing model?
- What is the appropriate hedge ratio, and how does it work? [8+2]

**7. 2069 Q.No. 10**

a. The share price of a certain company is currently Rs. 60. Six months from now, it will be either Rs. 75 with probability 0.70 or Rs. 50 with probability 0.30. A call option exists on the stock that can be exercised only at the end of 6 months at an exercise price of Rs. 65.

- If you wish to establish a perfectly hedged position, what would you do on the basis of the facts just presented?
- Under each of the two possibilities, what will be the value of your hedged position?
- What is the expected value of option price at the end of the period? [10]

b. A call option enables the holder to acquire one share of stock at Rs. 45 a share for each option held. The option has 6 months until its expiration. The market price of the stock is currently Rs. 40 a share, and the expected standard deviation of its continuously compounded return over the near future is 30. The short-term annual interest rate is 10 percent.

- On the basis of this information, what is the proper value of the option using the Black-Scholes option pricing model? How this information is useful?
- What is the appropriate hedge ratio, and how does it work? [10]

Ans: a. (i) 0.4. (ii) Rs. 100 (iii) Rs. 7 per option, b. Rs. 2.267

**8. 2069 Old Q.No. 9a**

Using Black-Scholes Model, find out the value of call option based on following information:

Price of stock now =  $P = \text{Rs. } 65$

Exercise price =  $E = \text{Rs. } 60$

Standard deviation of continuously compounded annual returns =  $0.5755$

Years to maturity =  $t = 0.25$

Interest rate per annum =  $r_1 = 4\%$  (equivalent to 0.98534% for 3 months)

Use the normal probability distribution table, natural logarithm and other tables. [10]

Ans: Rs. 10.2591

**9. 2068 Q.No. 10a**

a. The stock price of ABC Company at the beginning of a 6-month period is Rs 40 per share. At the end of the period, there is a 50 percent chance that the stock will increase in value to Rs 50 and a 50 percent chance that it will fall in value to Rs 38 per share. An option on the stock can be exercised only at the end of the period and at an exercise price of Rs 41. The risk-free rate is now 5 percent per period.

- How would you establish a perfectly hedged position, using the stock and the option?
- Show how the value of your position will be the same regardless of the stock price outcome. [10]

b. Mr. Y.B. Thapa plans to invest in the newly issued call option of the Hackberry Corporation. The call option has an exercise price of Rs 50 and a maturity date three months from now. The stock price is Rs 32, the instantaneous variance of the stock price is 0.64, and the risk free rate is 8 percent. Hackberry Corporation pays no dividends. What is the value of the call option? What would you do if the actual call price is Rs 5? [10]

Ans: (a) (i) 0.75 (b) Rs. 1.1653



**10. 2068 Old Q.No. 9**

Hi-Tech Co. is a new company whose common stock sells for Rs 30 per share. A call option exists on this stock with 3 months to expiration. It has an exercise price of Rs 25 and sells for Rs 10. You have made a careful study of the stock's volatility and conclude that a standard deviation of 0.50 is appropriate for the next 3 months.

Currently the annual rate on short term treasury bills is 6 percent.

- Using the Black-Scholes Option pricing model, is the option overvalued, undervalued and priced just right?
- Find the value of put options.
- If you believe in these numbers, what should you do?

[20]  
Ans: (a) Rs. 6.1986 (b) Rs 0.8261

**11. 2067 Q.No. 10**

- a. The stocks of Company X and Company Y are expected to have the following probability distributions with respect to market price per share 6 months hence.

Probability of occurrence	X (Rs.)	Y (Rs.)
0.15	34	22
0.20	38	28
0.30	40	36
0.20	42	44
0.15	46	50

Options exist for each of these stocks and both have an exercise price of Rs. 38 and an expiration date 6 months from now:

- What is the expected value of market price per share 6 months hence for the two companies?
  - What is the expected value of option price for the two options at expiration, assuming the options are held to this time?
  - Reconcile your answers to parts (i) and (ii).
- b. N Cell Company's common stock has a 6-month call option that permits the holder to acquire one share at Rs. 30. Presently, share price is Rs. 25, and the expected standard deviation of its continuously compounded return is 0.20. The short-term annual interest rate is 8 percent. What is the value of the option according to the Black-Scholes formula? Explain the significance of your result.

[10]  
Ans: (a) (i) Rs.40 and Rs.36 (ii) Rs.2.60 and Rs.3.00 (b) Rs. 0.3058

**12. 2067 Q.No. 9 (Old)**

A call option enables the holder to acquire one share of stock at Rs. 90 for each option held. The option has one year until its expiration. The market price of the stock is currently Rs. 80 a share, and the expected standard deviation of its continuously compounded return over the near future is 0.60. The short-term annual interest rate is 20 percent.

- On the basis of this information, what is the proper value of the option using the Black Scholes option pricing model?
- If the option is selling in the market for Rs. 25, is the option over-valued or under-valued?
- What is the appropriate hedge ratio, and how does it work?

[20]  
Ans: (a) Rs. 21.438 (b) overvalued (c) 0.6689

**13. 2066 Q.No. 9**

Ilex Distribution Company is currently valued at Rs. 600,000. Seventy percent of current value is the face value of pure discount debt, all of which will mature in 4.8 years. The standard deviation of returns is 0.90. The risk-free rate is 12 percent.

- Determine the market value of the equity.
- Determine the market value of the debt.
- What is the yield to maturity on the debt?

Ans: a. Rs 484,851.072; b. Rs 115,148.928; c. 30.94%

**14. 2065 Q.No. 9 a**

What is the value of a call and option put on Intel Company based on following data, exercise price is Rs.30, the maturity period is six months, the common stock price is Rs.40, the instantaneous variance of the rate of return is 0.50 and the risk free rate is 5 percent. 10

Ans: Rs 13.4608

**15. 2064 Q.No. 9**

The call option of Standard Trading Company has an exercise price of Rs. 20 and a maturity date six months from now. The stock price is Rs. 25. You have made a careful study of the stock's volatility and concluded that a standard deviation of 0.5 is appropriate for the next 6 months. Currently, the annual rate on short-term treasury bills is 5 percent. If the call option sells for Rs. 7.5, is the option overvalued, undervalued, or priced just right? What should be done according to Black-Scholes option-pricing model? [20]

Ans:  $V_c = \text{Rs. } 6.5958$ ; Sell the option

**16. 2063 Q.No. 5**

A call option enables the holder to acquire one share of stock at Rs. 45 a share for each option held. The option has 6 months until its expiration. The market price of the stock is currently Rs. 40 a share, and the expected standard deviation of its continuously compounded return over the near future is 0.30. The short-term annual interest is 10 percent.

- On the basis of this information, what is the proper value of the option using the Black-Scholes option-pricing model?
- If the option is currently selling for Rs. 2.75, what would be your strategy? [7+3]

Ans: (a)  $d_1 = -0.2136$   $d_2 = -0.4257$

**17. 2062 Q.No. 9**

The common stock of Shree Ram Sugar Mill is currently selling for Rs. 55. The call option matures in 3 months, the current risk free rate is 6 percent the firm pays no cash dividends, and the exercise price of the call option is Rs. 50. After careful study, you conclude that an instantaneous variance of the rate of return is 0.20.

- Using the Black-Scholes Option pricing model, find the expected value of the option. 20
- If you believe your result, what should you do?

Ans: (a) Rs. 8.03 (b) If the expected value is less than market price then one should sell the option and vice versa

**18. 2061 Q.No. 8 a**

What is the value of a call option on National Medical Supply based on following data if exercise price is Rs. 20, the maturity period is six months, the common stock price is Rs. 24, the instantaneous variance of the rate of return is 0.40 and the risk free rate is 6 percent? [10]

Ans: Rs. 6.55

**19. 2060 Q.No. 9**

Everest Distributing Company is currently valued at Rs.4 million. Twenty percent of current value is the face value of pure discount debt, all of which will mature in four years. The variance of percentage returns is 42.25 percent. The risk-free rate is 10 percent.

- Determine the market value of the equity.
- Determine the market value of the debt.
- What is the yield to maturity on the debt? [20]

Ans: (a) Rs. 3,506, 725.272 (b) Rs. 4,93,728 (c) 12.85%

**20. 2059 Q.No. 9**

The Mahakali Price Company is currently valued at Rs.500,000. Seventy percent of current value is the face value of pure discount debt, all of which will mature in four years. The variance of percentage returns is 55.25 percent. The risk-free rate is 12 percent.

- Determine the market value of the equity.
- Determine the market value of the debt.
- What is the yield to maturity on the debt [20]

Ans: (a) Rs. 359,319.59 (b) Rs. 140,680.41 (c) 25.59%



21. 2058

Miss Thapa plans to invest in the newly issued call option of the RC Company. The call option has an exercise price of Rs.50 and a maturity date three months from now. The stock price is Rs.32, the instantaneous variance of the stock price is 0.64, and the risk-free rate is 8 percent. RC company pays no dividends. What is the value of the call option?

Ans: Rs. 1,1653

## MBA

## THEORETICAL QUESTIONS

22. 2058 Q.No. 1

"An important implication of Optional Pricing Model developed by Fischer Black and Myron Scholes is that the value of the option is a function of the short-term interest rate of the time to expiration and of the variance of return on the stock." Discuss. [20]

23. 2057 Q.No. 1

What are the assumptions Option Pricing Model development by Fischer Black and Myron Scholes? How does the model help in determining an equilibrium value of an option? [20]

24. 2056 Q.No. 3

Discuss how does the Option Pricing Model enable to price out the value of the corporate securities. [20]

25. 2054 Q.No. 4 a

Explain how the time remaining before the expiration of option and the volatility of the underlying stock affect the premium on an option. [10]

26. 2053 Q.No. 3 b

"As the price of the stock increase, the premium on the option declines." Explain. [10]

## Write short notes on:

27. 2053 Q.No. 10 (a)

Call option and put option [10]

28. 2041 Q.No. 10 (b)

Call and put [10]

## NUMERICAL QUESTIONS

29. 2055 Q.No. 8

Kathmandu Laboratory's common stock sells for Rs.23 per share. A call option exists on this stock with 3 months to expiration. It has an exercise price of Rs.18 and sells for Rs.5.30. You have made a careful study of the stock's volatility and conclude that a standard deviation of 0.50 is appropriate for the next 3 months. Currently, the annual rate on short-term Treasury bills is 6 percent.

- Using the Black-Scholes option-pricing model, is the option overvalued, undervalued, and priced just right?
- If you believe in these numbers, what should you do? [20]

Ans: Rs. 5.6539 (b) undervalued

30. 2054 Q.No. 8

Lalitpur Chemical Company's common stock sells for Rs.23 per share. A call option exists on this stock with 3 months to expiration. It has an exercise price of Rs.18 and sells for Rs.5.30. You have made a careful study of the stock's volatility and conclude that a standard deviation of 0.10 is appropriate for the next 3 months. Currently, the annual rate on short-term Treasury bills is 6 percent.

- Using the Black-Scholes option-pricing model, is the option overvalued, undervalued, or priced just right?
- If you believe in these numbers, what should you do? [20]

Ans: Rs. 5.2682

**31. 2053 Q.No. 8**

Narayani Distributing Company is currently valued at Rs.4 million. Twenty percent of current value is the face value of pure discount debt, all of which matures in four years. The variance of percentage returns is 42.25 percent. The risk-free rate is 10 percent.

- Determine the value of the equity.
- Determine the value of the debt.
- What is the yield to maturity on the debt?

Ans: (a) Rs. 3,506, 725.272 (b) Rs. 4,93,728 (c) 12.85%

**32. 2052 Q.No. 9**

The CC Company is currently valued at Rs.500,000. Seventy percent of current value is the face value of debt, all of which will mature in four years. The variance of percentage returns is 56.25 percent. The risk-free rate is 10 percent.

Based on option pricing model, determine the following:

- Determine the market value of the equity.
- Determine the market value of the debt.

[20]

Ans: (a) Rs. 352,654.185 (b) Rs. 147,345.815

**33. 2051 Q.No. 9**

A certain Company is currently valued at Rs.3 million. One-third of the current value is the face value of the debt, all of which will mature in four years. The variance of percentage returns is 16 percent. The risk-free rate is 5 percent. Determine the market value of the equity and the market value of the debt

[20]

Ans: (a) Rs. 2,228,130.09 (b) Rs. 771,869.91

**34. 2050 Q.No. 9**

The call option of a certain company has an exercise price of Rs.20 and a maturity date six months from now. The stock price is Rs.25. You have made a careful study of the stock's volatility and concluded that a standard deviation of 0.5 is appropriate for the next 6 months. Currently, the annual rate on short-term treasury bills is 5 percent. If the call option sells for Rs.5.4, is the option overvalued, undervalued, or priced just right?

Ans: Rs. 6.5958, Option is undervalued

**35. 2048 Q.No. 9**

The KTM Company plans to invest in the newly issued call option of LLT Company. The call option has an exercise price of Rs.28 and a maturity date six months from now. The stock price is Rs.30, the instantaneous variance of stock price is 16, and the risk free rate is 10 percent. What is the value of the call option? If the call option sells for Rs.5.3, interpret the results.

Ans: Rs. 5.1405, Option is overvalued

**36. 2046 Q.No. 9**

The IF Company (IFCO), is a high-technology new company whose common stock sells for Rs.23 per share. A call option exists on this stock with 3 months to expiration. It has an exercise price of Rs.18 and sells for Rs.5.30. You have made a careful study of the stock's volatility and conclude that a standard deviation of 0.50 is appropriate for the next 3 months. Currently, the annual rate on short-term Treasury bills is 6 percent.

- Using the Black-Scholes option-pricing model, is the option overvalued, undervalued, or priced just right?
- If you believe in these numbers, what should you do?

Ans: (a) Rs. 5.65 (b) Buy the option

## 8. THEORY OF CAPITAL STRUCTURE

### MBS

#### THEORETICAL QUESTIONS

**1. 2070 Q.No. 9**

Describe the important theories of the capital structure. Which theory of capital structure is more relevant in the Nepalese capital market? Discuss.

[20]



**2. 2070 Old Q.No. 7**

"Two firms alike in every respect except capital structure must have the same total value."  
Discuss [20]

**3. 2069 Old Q.No. 1**

How far the capital structure decisions proved to be effective and optimal in the growing public limited companies in Nepal? If not effective and optimal, discuss briefly reasons for non-optimality in capital structure decisions? [10]

**4. 2069 Old Q.No. 8**

- a. Rix Camper Manufacturing Company has the following financial characteristics:  
No. of shares outstanding = 2,000,000 shares  
Common stock price = Rs. 10  
Expected level of net operating income/ EBIT = Rs. 2,000,000  
Dividend payout ratio = 100%  
No financial leverage used.
- Find the cost of common equity
  - Find the market value of equity
  - Do you think that cost of capital equals cost of equity in unlevered company?
- b. If the company sells Rs. 8 million debt at 6 percent with no taxes, how is the market value of the common stocks affected? What is the cost of capital and find the market value of the company assuming 10% cost of equity.
- c. Do you think that use of debt affects changes in value and earning per share of the company? Suppose 40% debt at 8 percent interest is used, what will be EPS and change in EPS if there exist Rs. 200,000 equity and no debt given EBIT of (i) Rs. 20,000; (ii) Rs. 40,000; (iii) Rs. 60,000 and (iv) Rs. 80,000?

Ans: a. (i) 10% (ii) Rs. 2,00,00,000 (b) 8.62% and Rs. 1,52,00,000

**5. 2068 Q.No. 9**

Discuss the position of Modigliani and Miller on the issue of optimal capital structure. [20]

**6. 2068 Old Q.No. 7**

What do you understand by MM's hypothesis on dividends? Explain whether dividends are relevant or irrelevant in Nepalese context. [20]

**7. 2067 Q.No. 9**

Capital structure is an unresolved issue as we still do not know whether the firm goes by optimal capital structure or by pecking order hypothesis. Discuss what empirical evidences are available on the issue of capital structure. [20]

**8. 2067 Q.No. 7 (Old)**

"With the increase in debt level, the overall cost of capital does not change, and the value of the firm would also remain constant. The increase in debt level would lead to increase in equity capitalization rate". Do you tend to agree with this approach to capital structure? How this approach is different from the position of Modigliani and Miller on the issue of optimal capital structure? [20]

**9. 2067 Q.No. 3 (Old)**

According to Modigliani and Miller, dividends are irrelevant. Discuss. [10]

**10. 2066 Q.No. 7**

"Greater the importance of the other imperfections, the less effective the MM arbitrage process becomes, and greater is the case that can be made for an optimal capital structure." Discuss. 20

**11. 2065 Q.No. 1**

Describe the position of Modigliani and Miller on the issue of optimal capital structure. 10

**12. 2064 Q.No. 7**

Compare the Traditional Theory of Capital Structure and the Modigliani-Miller approach both with and without corporate taxes, and also when corporate taxes, bankruptcy costs, agency costs, and other imperfection are introduced. What is the impact on the firm's cost of capital and its market value? Explain. [20]

**13. 2062 Q.No. 7**

Describe the various theories of the capital structure of the firm. Which theories of capital structure are more relevant and important in the Nepalese public limited companies? [20]

**14. 2060 Q.No. 7**

"Capital structure changes are not a thing of value in the perfect capital market world that MM assume." Discuss. [20]

**15. 2059 Q.No. 7**

Discuss the position of Modigliani and Miller on the issue of optimal capital structure. [20]

**16. 2058 Q.No. 7**

"Two firms alike in every respect except capital structure must have the same total value." Discuss. [20]

**Write short notes on:****17. 2069 Q.No. 8c**

Corporate leverage versus homemade leverage [5]

**18. 2069 Old Q.No. 6b**

Pecking order of financing [5]

**19. 2063 Q.No. 6 (c)**

Information asymmetry [5]

**NUMERICAL QUESTIONS****20. 2069 Q.No. 7**

Paisano Wine Company is presently family owned and has no debt. The Paisano family is considering going public by selling some of their stock in the company. Investment bankers tell them the total market value of the company is Rs. 10 million if no debt is employed. In addition to selling stock, the family wishes to consider issuing debt that, for computational purposes, would be perpetual. The debt then would be used to purchase stock, so the size of the company would stay the same. Based on various valuation studies, the net tax advantage of debt is estimated at 22 percent of the amount borrowed when both corporate and personal taxes are taken into account. The investment banker has estimated the following present values of bankruptcy costs associated with various levels of debt:

Debt (Rs. in Millions)	Present Value of Bankruptcy Costs, Rs.
1	0
2	50,000
3	100,000
4	200,000
5	400,000
6	700,000
7	1,100,000
8	1,600,000

Given this information, what amount of debt should the family choose? [10]

Ans: Rs. 5 million debt

**21. 2068 Q.No. 7**

Everest Food and Momo King, are identical except for capital structures. Everest Food has 50 percent debt and 50 percent equity, whereas Momo King has 20 percent debt and 80 percent equity. (All percentages are in market-value terms.) The borrowing rate for both companies is 13 percent in a no-tax world, and capital markets are assumed to be perfect.

- (1) If you own 2 percent of the stock of Everest Food, what is your rupee return if the company has net operating income of Rs 360,000 and the overall capitalization rate of the company,  $k$ , is 18 percent? (2) What is the implied required rate of return on equity?
- Momo King has the same net operating income as Everest Food. (1) What is the implied required equity return of Momo King? (2) Why does it differ from that of Everest Food? [10]

Ans: (a) (i) Rs. 4,600 (ii) 23% (b) (i) 19.25%



**22. 2067 Q.No. 7**

Nepal Botanical Garden Inc. has Rs. 1 million in earnings before interest and taxes. Currently it is all equity financed. It may issue Rs. 3 million in perpetual debt at 15 percent interest to repurchase stock, thereby recapitalizing the corporation. There are no personal taxes.

- If the corporate tax rate is 40 percent, what is the income to all security holders (1) if the company remains all equity financed? (2) if it is re-capitalized?
- What is the present value of the debt tax shield?
- The required return on equity for the company's stock is 20 percent while it remains all equity financed. What is the value of the firm? What is the value if it is recapitalized? [8]

Ans: (a) Rs. 600,000; Rs. 780,000 (b) Rs. 1,200,000 (c) Rs. 4,200,000

**23. 2065 Q.No. 8**

The Mark Company has net operating earnings of Rs.12 million and Rs.20 million debts with a 7 percent interest charge. In all cases, assume no taxes.

- Using the net income approach and an equity capitalization rate of 15 percent, compute the total value of the firm and the implied overall capitalization rate.
- Assume that the firm issues an additional Rs.10 million in debt and uses the proceeds to retire stock; the interest rate and equity capitalization rate remains same. Compute the new total value of the firm and overall capitalization rate.
- Using the net operating income approach and overall capitalization rate of 10 percent, compute the total market value, the stock market value, and the implied equity capitalization rate for the company prior to the sale of additional debt.
- Determine the answer to part c, if the company were to sell the additional Rs.10 million in debt.

Ans: (a) Rs. 90,666,666.67; 13.24% (b) Rs. 96,000,000; 12.50% (c) Rs. 120,000,000; Rs. 100,000,000; 10.60% (d) Rs. 120,000,000; Rs. 90,000,000; 11%

**24. 2064 Q.No. 3**

XYZ Company has employed debt capital of Rs. 6 million paying interest rate of 5 percent and expected operating earnings (EBIT) amounted to Rs. 2 million per year. The company's cost of capital is assumed to be constant at 10 percent. Given these information,

- Calculate the firm's market value, value of the firm's common stock, cost of the firm's equity and debt-equity ratio using Net Operating Income Approach (NOI).
- If debt increases from Rs. 6 million to Rs. 10 million, calculate value of the firm, value of the common stock, cost of equity and debt-equity ratio. Why the value of the firm does not change despite increase in debt? [10]

Ans: (a)  $V = 20,000,000$ ;  $S = 14,000,000$ ;  $k_e = 12.14\%$ ;  $D/E = 42.86\%$  (b)  $V = 20,000,000$ ;  $S = 10,000,000$ ;  $k_e = 15\%$ ;  $D/E = 100\%$

**25. 2062 Q.No. 3**

Duckham Company is an unlevered firm that has constant expected operating earnings (EBIT) of Rs. 2 million per year. The company's tax rate is 40 percent. The market value for unlevered firm is Rs. 12 million. Management of the company is considering the use of some debt financing to buy back stock so that the size of the firm remains constant. But use of debt tends to increase the costs of financial distress to the amount of Rs. 8 million. The probability of distress would increase with leverage according to the following schedule:

**Value of debt probability of financial distress**

Value of debt	Probability of financial distress
25,00,000	0.00%
50,00,000	1.25
75,00,000	2.50
100,00,000	6.25
125,00,000	12.50
150,00,000	31.25
200,00,000	75.00

- What is company's cost of equity and average cost of capital at this time?
- According to pure MM after tax valuation model, what is the optimal level of debt?

- c. What is the optimal capital structure when financial distress costs is included. 10

Ans: (a) 10% (b) Rs. 20 million (c) 12.5 million

26. 2061 Q.No. 4

Jyoti Spinning Mill has net operating income (NOI) of Rs. 5 million and pays a coupon rate of 10 percent on all debt. Assume that there are no taxes and all debt is issued at par.

- a. Under net income approach, assuming a cost of equity capital of 15 percent, compute the value of the firm and cost of capital for (i) all equity capital structure (ii) debt of Rs. 23 million and (iii) all debt capital structure.
- b. Under net operating income approach, assuming a cost of equity capital of 12.5 percent, compute the value of the firm cost of equity capital for (i) all equity capital structure (ii) debt of Rs. 23 million and (iii) all debt capital structure.
- c. Why is capital structure issue more important under net income approach and only a mere detail under net operating income approach? [10]

Ans: (a) (i)  $V = \text{Rs. } 33,333,333.33$  WACC = 15% (ii)  $V = \text{Rs. } 41,000,000$ ; WACC = 12.20% (iii)  $V = \text{Rs. } 23,000,000$ ; WACC = 10% (b) (i)  $V = \text{Rs. } 40,000,000$ ; WACC = 12.5% (ii)  $V = \text{Rs. } 40,000,000$ ; WACC = 15.88% (iii)  $V = \text{Rs. } 23,000,000$ ; WACC = 0% (c) Because the capital structure affect the value of the firm.

**MBA**

**THEORETICAL QUESTIONS**

27. 2055 Q.No. 3 b

Is it true that wide variations in the use of financial leverage occur both among industries and among the individual firms in each industry? Why do these variations occur? [10]

28. 2054 Q.No. 3 a

"Using leverage has both good and bad effects." Explain the statement. [20]

29. 2053 Q.No. 2

What are the break point and why do they occur in Marginal cost of Capital Schedules? How can a break point be determined?

30. 2051 Q.No. 1

"Capital structure is not a thing of value and hence two firms a like in every respect except capital structure must have the same total value." Discuss. [20]

31. 2050 Q.No. 1

Discuss Net Income and Net Operating Income Approaches to valuation of earnings of the company. [20]

32. 2048 Q.No. 1

Explain the position of Modigliani and Miller on the issue of optimal capital structure. [20]

33. 2046 Q.No. 4

Discuss the positions of Modigliani and miller on the issue of optimal capital structure. [20]

34. 2045 Q.No. 4

Compare and contract NI approach with the NOI approach and explain in what respect these approaches differ from the traditional view. [20]

35. 2044 Q.No. 4

"The Modigliani and miller thesis is based on unrealistic assumptions." Do you agree? Explain clearly. [20]

36. 2041 Q.No. 4

Explain the arbitrage argument on which Modigliani and Miller base their support of the No1 approach. Also point out the important assumptions of the argument. [20]

■ Write short notes on:

37. 2057 Q.No. 10 c

Arbitrage argument [5]

38. 2053 Q.No. 10 c

Net income theory versus net operating income theory of capital structure [5]

39. 2040 Q.No. 10 (d)

Modigliani and Miller Approach to cost of capital [5]



## NUMERICAL QUESTIONS

## 40. 2058 Q.No. 9

The Indo Suez Company and the Grindlays Company are identical in every respect except that the Indo Suez Company is not levered, while the Grindlays Company has Rs. 2 million in 12 percent bonds outstanding. There are no taxes, and capital markets are assumed to be perfect. The valuation of the two firms is the following:

	Indo Suez	Grindlays
Net operating income	Rs. 600,000	Rs. 600,000
Interest on debt	0	240,000
Earnings to common	Rs. 600,000	Rs. 360,000
Required equity rate	0.15	0.16
Market value of stock	Rs. 4,000,000	Rs. 2,250,000
Market value of debt	0	2,000,000
Total value of firm	Rs. 4,000,000	Rs. 4,250,000
Implied overall capitalization rate	15.00%	14.12%
Debt-to-equity ratio, B/S	0	0.89

- a. You own Rs. 22,500 worth of Grindlays stock. Show the process and the amount by which you could reduce your outlay through the use of arbitrage.
- b. When will this arbitrage process cease? [20]

Ans: (a) Rs. 2,500 (b) When the value of two firm become equal this arbitrage process will lease

## 41. 2057 Q.No. 9

The Mac Company has net operating earnings of Rs. 10 million and Rs. 20 million of debt with a 7 percent interest charge. In all cases, assume no taxes.

- a. Using the net income approach and an equity capitalization rate of 12.5 percent, compute the total value of the firm and the implied overall capitalization rate.
- b. Assume that the firm issues an additional Rs.10 million in debt and uses the proceeds to retire stock; the interest rate and equity capitalization rate remains the same. Compute the new total value of the firm and overall capitalization rate.
- c. Using the net operating income approach and an overall capitalization rate of 11 percent, compute the total market value, the stock market value, and the implied equity capitalization rate for the Company prior to the sale of additional debt.
- d. Determine the answers to part 'c' if the company were to sell the additional Rs. 10 million in debt. [20]

Ans: (a)  $V = 88,800,000$ ,  $K_e = 11.26\%$  (b)  $V = Rs. 93,200,000$ ;  $K_e = 10.75\%$   
(c)  $V = Rs. 90,309,091$ ,  $s = Rs. 70,909,091$ ;  $K_e = 12.13\%$

## 42. 2056 Q.No. 9 a

Asian Company and Zerox Company, Inc., are identical except for capital structures. Asian has 50 percent debt and 50 percent equity, while Zerox has 20 percent debt and 80 percent equity. (All percentages are in market-value terms.) The borrowing rate of both companies is 13 percent in a no-tax world, and capital markets are assumed to be perfect.

- a. If you own 2 percent of the stock of Asian, what is your rupee return if the company has net operating income of Rs. 360,000 and the overall capitalization rate of the company, is 18 percent? What is the implied equity capitalization rate?
- b. What would be your rupee return if you invested the same amount of money in Zerox (Zerox has the same net operating earnings as Asian). What percentage of the total stock of Zerox would you own? What is the implied equity capitalization rate of Zerox? Why does it differ from that of Asian? [10]

Ans: (a) Rs. 5,600; 28% (b)  $K_e = 20.55$  (c) Zerox co. has less debt in its capital structure

## 43. 2056 Q.No. 9 b

Nepal Tobacco Company has Rs.1 million in earnings before interest and taxes. Currently it is all equity financed. It may issue Rs. 3 million in perpetual debt at 15 percent interest in order to repurchase stock, thereby recapitalizing the corporation. There are no personal taxes.

- a. If the corporate tax rate is 40 percent, what is the income to all security holders (1) if the company remains all equity financed? (2) if it is recapitalized?
- b. What is the present value of the debt tax shield?

- c. The required return on equity for the company's stock is 20 percent while it remains all equity financed. What is the value of the firm? What is the value if it is recapitalized? [10]

Ans: (a) (1) Rs. 6,00,000 (2) Rs. 780,000 (b) Rs. 1,200,000 (c)  $V_e = \text{Rs. } 3,00,000$   $U_e = \text{Rs. } 4,200,000$

## 44. 2052 Q.No. 7

The MM Company has net operating earnings of Rs. 20,000 and Rs. 30,000 of debt with a 10 percent interest charge. Assume the absence of taxes.

- Using the net income approach and an equity capitalization rate of 12 percent, compute the total value of the firm and the implied overall capitalization rate.
- Assume that the firm issues an additional Rs.20,000 in debt and uses the proceeds to retire stock; the interest rate and equity capitalization rate remains the same. Compute the new total value of the firm and overall capitalization rate.
- Using the net operating income approach and an overall capitalization rate of 11 percent, compute the total market value, the stock market value, and the implied equity capitalization rate for the MM Company before and after the sale of additional debt. [20]

Ans: (a)  $V = \text{Rs. } 171,667$   $K_e = 11.65\%$  (b)  $V = \text{Rs. } 1,75,000$   $K_e = 11.73\%$  (c)  $V = \text{Rs. } 1,81,818$ ;  $K_e = 11.38\%$

## 45. 2051 Q.No. 7

ZCO Company has Rs.1 million in earnings before interest and taxes. Currently it is all equity financed. The company may issue Rs. 3 million in perpetual debt at 15 percent interest in order to repurchase stock, thereby recapitalizing the company. There are no personal taxes.

- If the corporate tax rate is 40 percent, what is the income to all security holders if the company remains all equity financed? and if it is recapitalized?
- What is the present value of the debt tax shield?
- The equity capitalization rate for the company's stock is 20 percent while it remains all equity financed. What is the value of the firm? What is the value if it is recapitalized? [20]

Ans: (a) (1) Rs. 6,00,000 (2) Rs. 780,000 (b) Rs. 1,200,000 (c)  $V_e = \text{Rs. } 3,00,000$   $U_e = \text{Rs. } 4,200,000$

## 46. 2048 Q.No. 7

The ABC Company and the XYZ Company are identical in every respect except that the ABC Company is not levered, while the XYZ Company has Rs. 2 million in 12 percent bonds outstanding. There are no taxes, and capital markets are assumed to be perfect. The valuation of the two firms is the following:

	ABC	XYZ
Net operating income	Rs. 600,000	Rs. 600,000
Interest on debt	0	240,000
Earnings to common	Rs. 600,000	Rs. 360,000
Equity capitalization	15	16
Market value of stock	Rs. 4,000,000	Rs. 2,250,000
Market value of debt	0	2,000,000
Total value of firm	Rs. 4,000,000	Rs. 4,250,000

- You own Rs. 22,500 worth of XYZ company. Show the process and the amount by which you could reduce your outlay through the use of arbitrage.
  - When will this arbitrage process cease? [20]
- Ans: (a) Rs. 2,500 (b) When the value of two firm become equal this arbitrage process will cease

## 9. DIVIDEND POLICY

## MBS

## 1. 2070 Q.No. 3

"Modigliani and Miller's dividend irrelevance hypothesis is not realistic." Critically comment on the statement. [10]

## 2. 2069 Q.No. 9

Dividend policy is an unresolved issue. Explain what major empirical evidences are available on dividend policy. [20]



**3. 2069 Old Q.No. 7**

Explain how far the arguments for dividend payout matter in a situation of the controversy of the irrelevance position of dividend under Modigliani Miller hypothesis? [20]

**4. 2066 Q.No. 3**

Modigliani and Miller's dividend irrelevance hypothesis is not well-founded and realistic, and hence lacks practical relevance. Discuss the arguments for the relevance of dividends. [10]

**5. 2063 Q.No. 1**

Do you think that dividend policy of a company helps in the maximization of shareholder's wealth? Comment [10]

**6. 2062 Q.No. 1**

Do you think that dividend policy of a company helps in the maximization of shareholder's wealth? Comment. [10]

**Write short notes on:****7. 2070 Old Q.No. 6b**

MM's hypothesis on dividends [5]

**8. 2068 Q.No. 8c**

Dividend payout irrelevance [5]

**9. 2068 Old Q.No. 6b**

Dividend versus retained earnings [5]

**10. 2065 Q.No. 6 b/2061 Q.No. 6 c**

Optimal dividend policy [5]

**11. 2064 Q.No. 6 c**

Financial Signaling [5]

**12. 2059 Q.No. 6 c**

Dividend payout irrelevance [5]

**M B A****13. 2064 Q.No. 6**

Explain the inter-dependence of investment, financing and dividend policy decisions. [20]

**Write short notes on:****14. 2060 Q.No. 6 c**

Dividend versus terminal value [10]

**15. 2058 Q.No. 10 c**

Information effects of dividend [10]

**16. 2057 Q.No. 10 a / 2051 Q.No. 10 c**

Optimal dividend policy [10]

**17. 2052 Q.No. 10 c**

Dividends policy goals [10]

**18. 2046 Q.No. 10 (c)**

Dividends and value of the firm [10]

**TRUE AND FALSE****1. 2070 Q.No. 1**

Indicate whether the following statements are 'True' or 'False'.

- Firms whose marginal tax is high, prefer equity financing.
- Short-term financing is generally less costly.
- In a world of taxes, bankruptcy costs, and other market imperfections, there is likely to be an optimal capital structure for the firm.
- When a firm puts a call provision on its new issue of bonds, it can reduce coupon rate on new issue.

**2. 2069 Q.No. 1**

Indicate whether the following statements are 'True or False' and also support your answer with reasons:

- If the firm wants to do away with credit department and avoid bad debt losses, it should go for pledging of receivables. *(Short-term)*
- A long-term lease that cannot be cancelled and that normally makes the lessee responsible for all maintenance is called financial lease. *(Leasing)*
- Indenture is a document that explains the orderly retirement of bonds or preferred stocks. *(Long-term debt...)*
- According to Modigliani and Miller, investors are able to manufacture homemade leverage for corporate leverage. *(Theory of Capital Structure) [10]*

**3. 2068 Q.No. 1**

Indicate whether the following statements are 'True or False' and also support your answer with reasons: [10]

- Closed-end bonds are the bonds where additional bonds can be issued. *(Long-term Debt...)*
- Convertible will never sell below its value as a straight bond or conversion value. *(Warrants and Convertibles)*
- Debt issues are regarded as 'bad news' and stock issues as 'good news.' *(Long-term Debt...)*
- According to MM's 1961 study, dividends are irrelevant under perfect market conditions. *(Dividend Policy)*

**4. 2067 Q.No. 1**

Indicate first whether the following statements are 'True or False' and then support your answer with reasons: [8]

- Chattel mortgage is best suited for inventories with rapid turnover. *(Short term Financing)*
- Trustee facilitates communication between the issuer and the numerous investors. *(Long-term debt)*
- Generally, the valuation of exchangeable debt is less than that of convertible debt in the market. *(Warrants and Convertibles)*
- Holding convertibles entails less risk than holding common stock. *(Warrants and Convertibles)*