

[Time: 3 Hours]

[Marks:100]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. Figures to the right indicates marks allotted.
 3. Graph papers will be provided on request.
 4. Use of simple non-programmable calculator is allowed.

Section - I**Q.1** Attempt **Any Four** from the following:

- A) If the market price of a share with face value Rs.100 is Rs.130, how many shares of the company can be bought for Rs.3263, brokerage being 0.4%. [05]
- B) Smooth Writing Industry issued some shares of face value Rs.10 each. A dividend of Rs. 7500 was declared by the company at 2.5% per share. Find number of shares issued by the company. [05]
- C) Neil purchased 1200 units of a mutual fund by investing Rs.60000. if the entry load was 2%, find NAV on the date of purchase. [05]
- D) Nihar invested Rs.40000 in a mutual fund on 14-2-2012 when its NAV was Rs. 13.65. a dividend of Rs.3 per unit was given on 20-4-2012. Afterwards he sold all the units on 20-8-2012 when NAV was Rs. 16.85. Find his gain if there is no entry and exit load. [05]
- E) An investor joined the SIP scheme for a mutual fund under which he would invest Rs. 15000 for 5 months. If the NAVs for each month are Rs. 42.6, Rs.45, Rs. 47, Rs.47.5 and Rs. 60, find the average cost using Rupee cost averaging method, the entry load being 2.5% throughout for these months. [05]

Q.2 Attempt **Any Four** from the following:

- A) From 4 professors and 6 students, a committee of 4 is to be formed. In how many ways the committee can be formed such that it contains only one professor. [05]
- B) How many numbers of 5 digits can be formed using the digits 1,2,3,4,5,6 such that [05]
 i) no digit is repeated
 ii) repetition of digits is allowed
- C) How many ways out of 11 members of a cricket team choose a Captain, Vice-captain and wicket-keeper from among themselves? [05]
- D) Solve the linear programming problem graphically. [05]
 Min $z = -10x + 7y$
 Subject to: $2x + y \geq 2$,
 $x + 3y \geq 3$,
 $x, y \geq 0$
- E) A cracker manufacturer produces two types of crackers, rockets and bombs packed in boxes of hundreds in its two factories. Factory I performs the basic assembly operation. Factory II performs the finishing operation. For financial reason, Factory I has only 180 hours available per week and factory II has 120 hours available. Factory I needs 3 hours on each box of rockets and 10 hours on each box of bombs. Factory II needs 6 hours on box of rockets and 4 hours on box of bombs. The profit of the company is Rs.45 per box of rockets and Rs.55 per box of bombs. Formulate the LPP to maximize the profit. [05]

