

# MATHEMATICS

**[Time: 2½ Hours]**
**[Marks 75]**

Please check whether you have got the right question paper.

1. All Questions are compulsory.
2. Figures to the right indicates full marks.
3. Used of any other calculator is not allowed

**Q.1. A Choose the correct alternative and re-write the statement (any eight) [08]**

- 1) If the angles of a triangle are in the ration 3:8:9 then their respective degree measures are
 

a) $27^{\circ}, 72^{\circ}, 81^{\circ}$	c) $24^{\circ}, 64^{\circ}, 92^{\circ}$
b) $32^{\circ}, 70^{\circ}, 78^{\circ}$	d) None of these
  
- 2) If the cost price exceeds the net selling price then there is
 

a) Profit	c) No Profit no loss
b) Loss	d) None of these
  
- 3) The difference between the market value & the net worth of a business is its
 

a) Profit	c) loss
b) Goodwill	d) None of these
  
- 4) The difference between simple & compound interest on an amount at r % p.a. after one year is
 

a) Zero	c) 100
b) One	d) None of these
  
- 5) If the payments of an annuity are all equal & are made over successive period of time, then it is
 

a) Uniform annuity	c) Due annuity
b) Immediate annuity	d) None of these
  
- 6) A mutual fund with no entry load or exit load is called
 

a) Zero load fund	c) a) or b)
b) New load fund	d) None of these
  
- 7) The shares which are paid a dividend at a rate which is decided by the board of directors of company are known as
 

a) Equity share	c) a) or b)
b) Preference share	d) None of these
  
- 8) A load is expressed as a percentage of
 

a) SIP	c) NAV
b) NFO	d) AMC

- 9) The sub triplicate ratio of 1:64 is  
 a) 64:1  
 b) 3:192  
 c) 1:16  
 d) 1:4
- 10) An agent who guarantees the collections of dues from the customer is called  
 a) Guarantor  
 b) Factor  
 c) Del credere  
 d) None of these

**Q.1. B State whether the following statements are true or false (any seven) [07]**

- 1) Reduction in list price in commission.
- 2) Cash discount is the reduction given on the invoice price for cash payment.
- 3) The trading of shares done using DMAT accounts through banks.
- 4) The EMI increases if the total payment period is increased.
- 5) If  $\frac{a}{b} = \frac{c}{d}$  then  $\frac{ma}{b} = \frac{ma}{d}$ .
- 6) A fee levied on an investor at the time of purchasing units is called exit load.
- 7) Net assets are calculated as difference between total assets & liabilities of the scheme.
- 8) If  $A \propto B$  then  $B \propto A$ .
- 9) Printed price on goods are called invoice price.
- 10) If  $\frac{a}{b} = \frac{c}{d}$  then a, b, c & d are in proportion.

**Q.2. A** Two partners A & B agree to divide 30% of total profits equally between them & the balance in the ratio 3:4. If total profit is Rs. 30,000, find A's share of the profit. [08]

**Q.2. B** The number of liters of water required to fill a circular tank jointly varies with the square of radius  $r^2$  & the depth  $d$ . If for a tank of radius 3 meters & depth 2 meters the water required is 30 liter. How much water is required to fill the tank of radius 5 meters & depth 4 meters. [07]

**OR**

**Q.2. A** A salesman is paid a fixed monthly salary plus a commission at a certain rate on sales. The salesman received Rs. 1,130 & Rs. 1,360 as remuneration for two successive months & his sales were Rs. 17,100 & Rs. 21,700 respectively. Find the fixed monthly salary & the rate of commission. [08]

**Q.2. B** A manufacturer makes a profit of 25% on cost after allowing a trade discount of 20% if the cost of manufacturing increases by  $12\frac{1}{2}\%$ , by how much percent should he reduce the trade discount if he wants to earn the profit at the same percentage rate without changing the catalogue price? [07]

**Q.3. A** Sahil will pay Shrikant Rs. 25,000 after 2 years & he will pay Shubhash Rs. 32,000 after 3 yrs. Find the total present worth of both payments. If the interest rate is 8% p.a. compounded annually. [08]

**Q.3. B** Hiren bought a Honda active scooter by paying a cash of Rs. 10,000 & the remaining amount in 4 equal quarterly installments of Rs. 11,000 each. If company wants to get 12% rate of interest p.a. find the present value of the scooter. **[07]**

**OR**

**Q.3. A** The simple & compound interest for 2 years on the same principal at the same rate are Rs. 7,200 & Rs. 7,622 respectively. Find the principle & the rate of interest. **[08]**

**Q.3. B** Ridhima takes a loan of Rs. 80,000 from a person for a period of 10 months. Compute the EMI at 12% p.a. on reducing balance. **[07]**

**Q.4. A** Laila invested Rs. 12,00,000 in a MF on 20<sup>th</sup> March, 2011 with NAV of 145.6. She redeemed all units on 9<sup>th</sup> Oct 2011 & received 2.5% rate of return. If there was no entry load or exit load, find NAV on date of Redemption. **[08]**

**Q.4. B** Ron got 260 shares of face value Rs. 10 each. He had to pay total amount of Rs. 99,590.4 to complete the transaction 0.8% brokerage. Find the market price of each shares. **[07]**

**OR**

**Q.4. A** Naksh invested Rs. 60,000 on 10<sup>th</sup> March 2011 when NAV was 18.75 with entry load of 2.25% calculate value of his investments on date of purchase & number of units. Also find its value on 20<sup>th</sup> September 2011 when NAV was 22.8. **[08]**

**Q.4. B** Find the market value of 12% share if Rs. 6,400 were invested to purchase share with a face value of Rs. 100 & a total dividend of Rs. 480 was obtained. **[07]**

**Q.5. A** Define annuity write types of annuity. **[08]**

**Q.5. B** Distinguish between shares & mutual funds. **[07]**

**OR**

**Q.5. Write short notes (any three) [15]**

a) Loads on mutual funds.

b) Distinguish between ratio & proportion.

c) Describe direct & indirect variation.

d) Define: commission agent, a del credere agent & an auctioneer.

e) Explain: discount, trade discount & cash discount.