



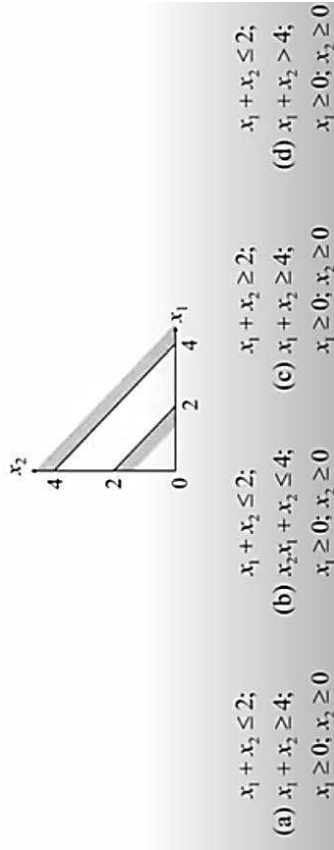
Time : 1 hours

- 39 annual deposit if interest is 5% per annum .....  
 (a) ₹ 6,142 (b) ₹ 6,049 (c) ₹ 6,052 (d) 6,159
- 40 Paul borrowers ₹ 20,000 on condition to repay it with compound interest at 5% p.a. in annual instalment of ₹ 2,000 each. Find the number of years in which the debt would be paid off.  
 (a) 10 years (b) 12 years (c) 14 years (d) 15 years
- 41 Find the present value of an annuity of ₹ 1,000 payable at the end of each year for 10 years. If rate of interest is 6% compounding per annum. (given  $(1.06)^{-10} = 0.5584$ ): [1 Mark, June 2010]  
 (a) ₹ 7,360 (b) ₹ 8,360 (c) ₹ 12,000 (d) None of these.
- 42 ₹ 80,000 is invested to earn a monthly interest of ₹ 1,200 at the rate of \_\_\_\_\_ p.a. Simple interest.  
 (a) 12% (b) 14% (c) 16% (d) 18%
- 43 Suppose your mom decides to gift you ₹ 10,000 every year starting from today for the next sixteen years. You deposit this amount in a bank as and when you receive and get 8.5% per annum interest rate compounded annually. What is the present value of this money: [P (15, 0.085) = 8.304236]  
 (a) ₹ 83,042 (b) 90,100 (c) 93,042 (d) 10,100
- 44 Find the present value of an ordinary annuity of 8 quarterly payments of ₹.500 each, the rate of interest being 8% p.a. compound quarterly  
 (a) 4275.00 (b) 4725.00 (c) 3662.50 (d) 3266.50
- 45 The effective annual rate of interest corresponding to a normal rate of 6% per annum payable half yearly is:  
 (a) 6.06 % (b) 6.07 % (c) 6.08 % (d) 6.09 %
- 46 A trust fund has invested ₹.27000 money in two schemes 'A' and 'B' offering compound interest at the rate of 8% and 9% per annum respectively. If the total amount of interest accrued through these two schemes together in two years was ₹. 4818.30. What was the amount invested in schemes 'A' ?  
 (a) ₹ 12,000 (b) ₹ 12,500 (c) ₹ 13,000 (d) ₹ 12,500
- 47 A machine with useful life of 7 years costs ₹. 10,000 while another machine with useful life of 5 years costs ₹.8000. The first machine saves labour expenses of ₹.1900 annually and the second one saves labour expenses of ₹.2200 annually. Determine the preferred course of action. Assume cost of borrowing as 10% compounded per annum.  
 (a) 1st Machine should be purchased (b) 2nd Machine should be purchased  
 (c) Information is not sufficient (d) None of these
- 48 ₹.10,000 is invested every month and in an account paying interest @ 12% per annum compounded monthly. What is the future value of this annuity just after making 11th payment? (Given that  $(1.01)^{11} = 1.1156$ )  
 (a) ₹.115,600 (b) ₹.156,100 (c) ₹.156,800 (d) ₹.157,100
- 49 Sinking fund factor is the reciprocal of :  
 (a) Present value interest factor of a single cash flow  
 (b) Present value interest factor of an annuity  
 (c) Future value interest factor of an annuity  
 (d) Future value interest factor of a single cash flow.
- 50 10 years ago the earning per share (EPS) of ABC Ltd. was ₹.5 share its EPS for this year is ₹.22. Compute at what rate, EPS of the company grow annually?  
 (a) 15.97% (b) 16.77% (c) 18.64% (d) 14.79%
- 51 A sum of money invested of compound interest double itself in four years. In how many years it become 32 times of itself at the same rate of compound interest.  
 (a) 12 years (b) 16 years (c) 20 years (d) 18 years

- 01 If  $15(2p^2 - q^2) = 7pq$  where p,q are positive then p:q  
 (a) 5:6 (b) 3:5 (c) 5:7 (d) 3:7
- 02 If one type of rice of cost ₹. 13.84 is mixed with another type of rice of cost of ₹.15.54. The mixture is sold at ₹. 17.6 with a profit of 14.6% on selling price then in which proportion the two types of rice are mixed?  
 (a) 3:7 (b) 5:7 (c) 7:9 (d) 9:1
- 03 Find the ratio of third proportional of 12 & 30 and mean proportional of 9 & 25  
 (a) 9:4 (b) 7:2 (c) 5:1 (d) 3:2
- 04 What must be added to each of the numbers 10, 18, 22 and 38 to make them proportional  
 (a) 3 (b) 2 (c) 5 (d) 4
- 05 A bag contains 23 number of coins in the form of 1 rupee, 2 rupees and 5 rupees coin. The total sum of the coins is ₹.43. The ratio between 1 rupee and 2 rupees coins is 3:2, then the number of 1 rupee coins is .....  
 (a) 12 (b) 10 (c) 8 (d) None of the above
- 06 If a:b=9:4 then  $\sqrt{\frac{a}{b}} + \sqrt{\frac{b}{a}}$  is .....  
 (a)  $\frac{2}{3}$  (b)  $\frac{3}{2}$  (c)  $\frac{13}{6}$  (d)  $\frac{6}{13}$
- 07 If  $2^{x+y} = 2^{2x+y} = \sqrt{8}$  then the respective values of x and y are .....  
 (a)  $\frac{1}{2}, \frac{1}{2}$  (b)  $\frac{1}{2}, 1$  (c)  $1, \frac{1}{2}$  (d) 1, 1
- 08 The first, second and third month salaries of a person are in the ratio 2:4:5. The difference between the product of the salaries of first 2 months & last 2 months is ₹. 4,80,00,000. Find the salary of the second month  
 (a) 4,000 (b) 6,000 (c) 8,000 (d) 12,000
- 09 If P is 25% less than Q and R is 20% higher than Q. The ratio of R and P .....  
 (a) 3:5 (b) 5:8 (c) 8:5 (d) 5:3
- 10 If x:y=2:3, then  $(5x+2y):(3x-y)=$  .....  
 (a) 7:2 (b) 16:3 (c) 7:3 (d) 19:3
- 11 The value of  $\frac{3^{n+1}+3^n}{3^{n+3}-3^{n+1}}=$  .....  
 (a)  $\frac{1}{5}$  (b)  $\frac{1}{6}$  (c)  $\frac{1}{4}$  (d)  $\frac{1}{9}$
- 12 Find the value of x if  $x, x^{\frac{1}{2}}, x^{\frac{1}{3}}$   
 (a) 2 (b) 3 (c) 4 (d) 5
- 13 If  $\sqrt[3]{a+\sqrt{b}} + \sqrt[3]{c}=0$  then find the value of  $(\frac{a+b+c}{3})^3$   
 (a) abc (b) 9abc (c)  $\frac{1}{abc}$  (d)  $\frac{9}{abc}$
- 14 The value of  $(\frac{y^a}{y^b})^a + ab + b^2 \cdot (\frac{y^b}{y^c})^b + bc + c^2 \cdot (\frac{y^c}{y^a})^c + ca + a^2 =$   
 (a) -1 (b) 0 (c) 1 (d) 10
- 15 The value of  $(\frac{9^{n+1} \cdot \sqrt{3 \cdot 3^n}}{3 \cdot \sqrt{3^{2n}}})^{\frac{1}{n}} =$   
 (a) 1 (b) 9 (c) 3 (d) 27
- 16 Find the value of  $\text{Log}_4 9$ .  $\text{Log}_5 2 =$   
 (a) 3 (b) 9 (c) 2 (d) 1

- 17 If  $2+\sqrt{3}$  is one root of  $x^2+px+q=0$ . Then p and q are .....  
 (a) -4, -1 (b) 4, -1 (c) -4, 1 (d) 4, 1
- 18 If the A.M between the roots of Quadratic equation is '8' and G.M is '5', then the equation is .....  
 (a)  $x^2+16x-25=0$  (b)  $x^2-16x+25=0$  (c) Both a & b (d) None
- 19 If  $|x-1|+|x-3|=7$ , then x is ..... (a) 6 (b) -1 (c) Both a & b (d) None
- 20 Roots of the cubic equation  $x^3-7x+6=0$  are ----  
 (a) 1, 2, 3 (b) 1, -2, 3 (c) 1, 2, -3 (d) 1, -2, -3
- 21 XYZ Company has a policy for its recruitment as: it should not recruit more than eight men (x) to three women (y). How can this fact be expressed in inequality?  
 (a)  $3y \geq 8x$  (b)  $3y \leq x/8$  (c)  $8y \geq 3x$  (d)  $8y \leq 3x$

22 The region indicated by the shading in the graph is expressed by the inequalities:



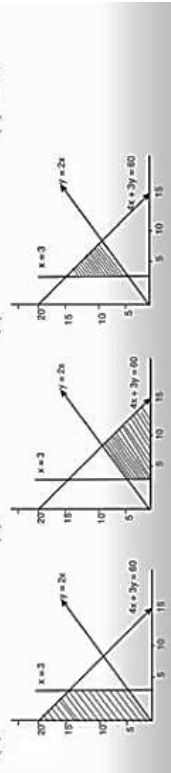
- 23 The common region in the graph of the inequalities  $x+y \leq 4$ ,  $x-y \leq 4$ ,  $x \geq 2$  is  
 (a) Equilateral triangle (b) Isosceles triangle  
 (c) Quadrilateral (d) Square

24 Solve for x of the Inequalities  
 $2 \leq \frac{3x-2}{5} \leq 4$  where  $x \rightarrow N$

- (a) {5, 6, 7} (b) {3, 4, 5, 6}  
 (c) {4, 5, 6} (d) None

25 The common regions by the inequalities  $4x+3y \leq 60$ ;  $y \geq 2x$ ;  $x \geq 3$ ;  $x \geq 0$ , and  $y \geq 0$  is:

- (a) (b) (c) (d) None



26 The solution set of the in equations  $x+2 > 0$  and  $2x-6 > 0$  is

- (a)  $(-2, \infty)$  (b)  $(3, \infty)$   
 (c)  $(-\infty, -2)$  (d)  $(-\infty, -3)$

27 An employer recruits experienced (x) and fresh workmen (y) for his under the condition that he cannot employ more than 11 people. x and y can related by the inequality.

- (a)  $x+y \neq 11$  (b)  $x+y \leq 11$ ,  $x \geq 0$ ,  $y \geq 0$   
 (c)  $x+y \geq 11$ ,  $x \geq 0$ ,  $y \geq 0$  (d) None of these

28 On Solving the Inequalities  $5x+y \leq 100$ ,  $x \geq 0$ ,  $y \geq 0$ , we get the following solution:

- (a) (0, 0), (20, 0), (10, 50) & (0, 60)  
 (c) (0, 0), (20, 0), (0, 100) & (10, 50)  
 (b) (0, 0), (60, 0), (10, 50) & (0, 60)  
 (d) None of these.

29 The common region of  $x+y \leq 6$ ;  $x+y \geq 3$ ;  $x \geq 0$ ;  $y \geq 0$ , is (as shown by shaded region):

- (a) (b) (c) (d) None



30  $6x+y \geq 18$ ,  $x+4y \geq 12$ ,  $2x+y \geq 10$

On solving the inequalities; we get

- (a) (0, 18), (12, 0), (4, 2), & (7, 6)  
 (b) (3, 0), (0, 3), (4, 2) & (7, 6)  
 (c) (5, 0), (0, 10), (4, 2) & (7, 6)  
 (d) (0, 18), (12, 0), (4, 2), (0, 0) and (7, 6)

31 The annual birth and death rates per 1,000 are 39.4 and 19.4 respectively. The number of years in which the population will be doubled assuming there is no immigration or emigration is  
 (a) 35 years. (b) 30 years. (c) 25 years (d) none of these

32 How much amount is required to be invested every year as to accumulate Rs. 6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest.  $[(1.1)^{10} = 2.59374]$   
 (a) 37,467 (b) 37,476 (c) 37,647 (d) 37,674

33 A certain sum of money was invested at simple rate of interest for three years. If the same had been invested at a rate that was seven percent higher, the interest amount would have been Rs. 882 more. The amount of sum invested is .....  
 (a) 12,600 (b) 6,800 (c) 4,200 (d) 2,800

34 A sum of Rs. 44,000 is divided into three parts such that the corresponding interest earned after 2 years, 3 years and 6 years may be equal. If the rate of simple interest are 6% p.a., 8% p.a. and 6% p.a. respectively, then the smallest part of the sum will be .....  
 (a) 4,000 (b) 8,000 (c) 10,000 (d) 12,000

35 Mr. X invests ₹ 10,000 every year starting from today for next 10 years suppose: interest rate is 8% per annum compounded annually. Calculate future value of the annuity: (Given that  $(1+0.08)^{10} = 2.158925000$ ) [1 Mark, Nov. 2006]

- (a) ₹ 156454.88 (b) ₹ 144865.625 (c) ₹ 156554.88 (d) None of these

36 A company is considering proposal of purchasing a machine either by making full payment of ₹ 4,000 or by leasing it for four years at an annual rate of ₹ 1,250. Which course of action is preferable, if the company can borrow money at 14% compounded annually? [Given:  $(1.14) = 1.68896$ ]

- (a) Leasing is preferable (b) Should be purchased  
 (c) No difference (d) None of these

37 Vipul purchases a car for ₹ 5,50,000. He gets a loan of ₹ 5,00,000 at 15% p.a. from a Bank and balance ₹ 50,000 he pays at the time of purchase. He has to pay the whole amount of loan in 12 equal monthly instalments with interest starting from the end of the first month. The money he has to pay at the end of every month is : [Given  $(1.0125)^{12} = 1.16075452$ ]

- (a) ₹ 45,130.43 (b) ₹ 45,230.43 (c) ₹ 45,330.43 (d) None of these

38 A company establishes a sinking fund to provide for the payment of ₹ 2,00,000 debt maturing in 20 years. Contributions to the fund are to be made at the end of every year. Find the amount of each