N.B. :   1)   All question are compulsory.
2)   All question carry equal marks.
3)   Graph papers will be provided on request.
4)   Use of simple calculator is allowed

Section-I

Q.1 a)   A merchant asked his agent to sell a number of umbrellas at Rs.80 each and to invest the amount realised after deducting the agents commission on sales in purchasing 400 raincoats. The agent charged 2% commission on the sale of umbrella and $12\frac{1}{2}$% commission on the purchase of raincoats. If his total earnings in the two transactions was Rs.1472, find the number of umbrellas sold and also cost price of each raincoat.   5

b)   A shopkeeper sold a bicylce for a net amount of Rs.1045 after allowing 20% discount on the list price and further 5% for cash payment find the list price of a bicycle.   5

OR

Q.1 a)   X and Y are partners with investment Rs. 65,000 and Rs. 40,000 respectively. X is allowed salary of Rs. 5200 and Y is allowed salary of Rs. 6400. The remaining project or loss is divided in the ratio of their investments. How much of Rs.20,000. profit would be distributed to each partner.   5

b)   After deducting a discount at 10% from the list price, a shelf was sold for a net price of Rs. 5400. The profit gained was 35% on cost. Find the list and cost price of the shelf.   5

Q.2 a)   Nandini invested Rs. 10,225 in Franklin Templet on Mutual Fund when NAV was Rs.200 and entry load was 2.25% Find the number of units sold by her Also, find the dividend received by her when it was declared at 300%   5

b)   Solve the following linear programming problem by graphical method.
Minimise   Z = 12x + 20y subject to
$$x + y \geq 7$$
$$5x + 2y \geq 20$$
$$x \geq 0, \quad y \geq 0.$$ 5

OR

Q.2 a)   Mr. X buys 500 ten rupee shares of a company at Rs. 15 each from the stock market company pays 14% dividend annually. If the brokerage is paid 1% on share bought.
Find   i) The investment of Mr. X in shares.
ii) The annual income from the shares.
iii) The rate of return from the shares.   5

b)   A painter makes two paintings A and B. He spends 1 hour for drawing and 3 hours for colouring the painting A and he spends 2 hours for drawing and 1 hour for colouring the painting B. He can spend atmost 8 hours and a hours for drawing and

Section- II

Q.3 a) Tabulate the following information giving a suitable title.

of a total of 10000 applicants for a bank 6854 were males, 3146 were

commerce graduates others (graduate from facilities other than

commerce) Local applicants were 2623 of whom 1860 were males.

The number of male commerce Graduates was 2012. The number

of local commerce graduates was 2012. The number of Local commerce

graduates was 1093 of whom 323 were females.   **5**

b) **Observe the diagram given below and answer the questions given below :**   **5**

Aluminium Production in 1000 tonnes for three plan.
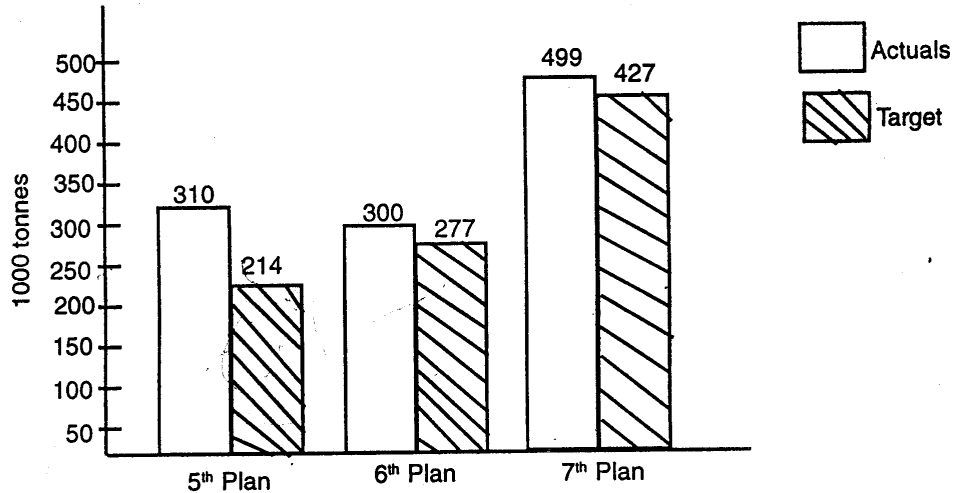
1) During which plan is the difference between the target and actual Aluminium production is

   i) the minimum   ii) the maximum ?

2) Has the actual production increased over three plans ?

3) Which plan has the maximum actual annual production ?

4) Has the actual production achieved the target during any plan ?

5) Name of diagram used above.

                    OR

Q.3 a) Draw the less than ogive curve and hence estimate i) median

ii) the number of workers whose age is less than 37 years.

Age	: Less than 25	25-30	30-35	35-40	40-45	45-50
No. of workers :	3	15	25	30	5	4

5

b) What is classification? What are the types of classification ? What are its

Q.4 a) The mean of marks of 100 students was found to be 42. Later it was found that the marks of two students was wrongly taken as 53 and 63 instead of correct marks 83 and 36. Find the corrected mean. Also find the corrected mean after leaving out the wrong values. **5**

b) Calculate mean deviation from mode for the following frequency distribution of time taken by cashier to serve customer in a Bank.

Time in seconds :	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	
No. of customer :	6	26	30	24	17	15	8	4	**5**

OR

Q.4 a) Find mean deviation from median and standard deviation for the following set of observations :

54, 56, 54, 57, 45, 50, 53, 53, 52, 51, 53, 54, 54, 55, 54 . **5**

b) Give the following date find the missing values.

	Group I	Group II	Group I + Group II
Number	100	(?--	-----
Average	40	43	42
Variance	25	----	21

5

Q.5 a) A bag contains 30 tickets with numbers from 1 to 30. One ticket is drawn at random. Find the probability that the number on the ticket drawn is multiple of

i)   2 or 5   ii) 3 and 5   iii) an odd number. **5**

b) A fair die is thrown. Find probability distribution of X where X is number on the uppermost price of a die. Find mean and variance of X. **5**

OR

Q.5 a) A box contains 5 blue and 8 green balls. If two balls are selected at random from this box, what is the probability that   i) they are both blue ii) both green iii) one blue and one green. **5**

b) The income of 100 workers in a factory follows a normal distribution with mean of Rs. 2500 and standard deviation Rs. 200/- Find the percentage of workers whose income is i) between Rs. 2400 /- and Rs. 2800/-   ii) greater than Rs. 2800 iii) less than Rs. 2400. Give area under the standard normal curve between i) 0 and 0.5 = 0.1915 ii) O and 1.5 = 0.4332. **5**

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