Mathematics (First Five Chapter)

Time: 1Hrs.   **M.M 35**
Section A (Three Marks each Question)

1. If the H C F of 657 and 963 is expressible in the form of 657x + 963x - 15 find x.
2. On dividing the polynomial $4x^4 - 5x^3 - 39x^2 - 46x - 2$ by the polynomial g(x) the quotient is $x^2 - 3x - 5$ and the remainder is -5x + 8.Find the polynomial g(x).
3. From a bus stand in Bangalore, if we buy 2 tickets to Malleswaram and 3 tickets to Yeshwanthpur, the total cost is ` 46; but if we buy 3 tickets to Malleswaram and 5 tickets to Yeshwanthpur the total cost is ` 74. Find the fares from the bus stanto Malleswaram, and to Yeshwanthpur.
4. $x = \cfrac{1}{2 - \cfrac{1}{2 - \cfrac{1}{2 - x}}}$ $x \neq 2$
5. Prove that $a_{m+n} + a_{m-n} = 2a_m$

Section A (Two Marks each Question)

6. The decimal expansion of $120/(3^2 5^7)$ is

(a)Terminating

(b)Non-terminating

(c)Non-terminating and Non-repeating

(d)None of the above

7. The largest number that divides 70 and 125, which leaves the remainders 5 and 8, is:

(a)65   (b)15   (c)13   (d)25

8. The number of polynomials having zeroes as -2 and 5 is:

(a)1

(b)2

(c)3

(d)More than 3

9. Zeroes of p(x) = x^2-27 are:

(a)±9√3

(b)±3√3

(c)±7√3

(d)None of the above

10. A fraction becomes 1/3 when 1 is subtracted from the numerator and it becomes 1/4 when 8 is added to its denominator. The fraction obtained is:

(a)3/12

(b)4/12

(c)5/12

(d)7/12

11. The solution of 4/x+3y=14 and 3/x-4y=23 is:

(a)⅕ and -2

(b)⅓ and ½

(c)3 and ½

(d)2 and ⅓

12. The roots of quadratic equation $2x^2 + x + 4 = 0$ are:

(a)Positive and negative

(b)Both Positive

(c)Both Negative

(d)No real roots

13. A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less for the same journey. Find the speed of the train.

(a)30 km/hr

(b)40 km/hr

(c)50 km/hr

(d)60 km/hr

14. The missing terms in AP: __, 13, __, 3 are:

(a)11 and 9

(b)17 and 9

(c)18 and 8

(d)18 and 9

15. If 17th term of an A.P. exceeds its 10th term by 7. The common difference is:

(a)1

(b)2

(c)3

(d)4