Algebra-3

Model Exam Question paper - 3

11th Standard

Business Maths

Reg.No. : | | | | | | |

I.Answer all the questions

Time : 01:05:00 Hrs | Total Marks : 50

Part-A | 4 x 1 = 4

1) The last term in $(x+b)^n$ is

(a) x^n (b) b^n (c) n (d) 1

2) The number of terms is $(2x+5)^7$ is

(a) 2 (b) 7 (c) 8 (d) 14

3) The middle term in $(x+a)^8$ is

(a) t_4 (b) t_5 (c) t_6 (d) t_3

4) The general term in $(x+a)^n$ is denoted by

(a) t_n (b) t_r (c) t_{r-1} (d) t_{r+1}

Part-B | 4 x 2 = 8

5) Resolve into partial fractions $\frac{4x+1}{(x-2)(x+1)}$

6) Find the value of (i) ${}^{10}p_1$, (ii) ${}^{7}p_4$, (iii) ${}^{11}p_0$

7) Expand $\left(x+\frac{1}{x}\right)^4$

8) Find the 5th term of $(2x-3y)^7$

Part-C | 6 x 3 = 18

9) From a set of 9 ladies and 8 gentlemen a group of 5 is to be formed.In how many ways the group can be formed so that it contains majority of ladies.

10) Find the number of diagonals of a hexagon.

11) By the principle of mathematical induction prove the following

$1.2+2.3+3.4+\ldots..n(n+1)=\frac{n(n+1)(n+2)}{3}$

12) By the principle of mathematical induction prove the following

$1^3+2^3+\ldots.n^3=\frac{n^2(n+1)^2}{4}$

13) Resolve into partial fractions $\frac{1}{(x-1)(x+2)^2}$

14) Resolve into partial fractions $\frac{x^2+1}{x(x+1)^2}$

Part-D | 4 x 5 = 20

15) A committee of seven students is formed selecting from 6 boys and 5 girls such that majority are from boys. How many different committees can be formed?

16) Show by the principle of mathematical induction that 3^{2n}-1 is divisible by 8 for all nϵ N.

17) Find the coefficient of x^{10} in the expansion of $\left(2x^2-\frac{3}{x}\right)^{11}$

18) Find the term independent of x in the expansion of $\left(\frac{4x^2}{3}-\frac{3}{2x}\right)^9$

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