BUSINESS MATHEMATICS AND STATISTICS

UNIT – 2

PERMUTATIONS AND COMBINATION

OBJECTIVE 1 marks questions

1. What is the value of ${}^{9}P_{3}$ 1

(a) 304 (b) 504 (c) 440 (d) None of these.

2. ${}^{N}P_{r}$ equal to – 1

(a) $\frac{\lfloor n}{\lfloor n \lfloor n-r}$ (b) $\frac{\lfloor n}{\lfloor r-n}$ (c) $\frac{\lfloor n}{\lfloor n-r}$ (d) None of these

3. 7 books are to be arranged in such a way so that two particular books are always at first and last piece, find the number of arrangements. 1

(a) 60 (b) 230 (c) 480 (d) 240

4. Exactly 3 girls are to be selected from 5 girls and 3 boys. The probability of selected 3 girls will be – 1

(a) $\frac{15}{28}$ (b) $\frac{1}{56}$ (c) $\frac{5}{28}$ (d) None of these.

5. A building contractor needs 3 helpers and 10 man apply in how many ways can these selection taken place – 1

(a) 15 (b) 120 (c) 36 (d) 150

6. What is the value of ${}^{8}C_{1}$ 1

(a) 5 (b) 7 (c) 8 (d) None of these

7. ${}^{N}C_{r}$ equal to 1

(a) $\frac{\lfloor n}{\lfloor n-r}$ (b) $\frac{\lfloor n}{\lfloor r-n}$ (c) $\frac{\lfloor n}{\lfloor n \lfloor n-r}$ (d) Non of these

8. ${}^{3}P_{2}$ x ${}^{5}C_{1}$ equal to 1

(a) 15 (b) 10 (c) 25 (d) None of these

9. Calculation of $\frac{\lfloor 8}{\lfloor 4}$ is 1

(a) 1680 (b) 1560 (c) 1760 (d) None of these

10. If ${}^{7}P_{r} = 42$ find the value of r 1

(a) 3 (b) 2 (c) 4 (d) none of these

11. If ${}^{n}P_{2} = 42$ find the value of n 1

(a) 3 (b) 2 (c) 7 (d) none of these

12. How many words can be formed with letter of the word SUNDAY taken two at a time. 1

(a) 20 (b) 15 (c) 30 (d) None of these

13. In how many ways can 10 seats in a bus be occupied by 4 passengers 1

(a) 5040 (b) 3040 (c) 1000 (d) None of these

14. Find n if $n_{c_5} = n_{c7}$ 1

(a) 10 (b) 2 (c) 35 (d) 12

15. $\underline{|6}$ equal to 1

(a) 6x5x4 (b) 6x5x$\underline{|4}$ (c) both (d) None of these

LONG TYPE QUESTIONS 08 MARKS

16. Out of 6 gentlemen and 4 ladies a committee of 5 is to be formed. In how many ways can this be done. So as to include at least one leady in each committee. 8

17. In how many ways can team of 11 choosen from 14 Football players, if two of them can only be goalkeepers. 8

18. Find the value of n, if $n_{c4} = 5x\ n_{p3}$ 8

19. 3 women and 5 men are to sit in a row for a Dinner. Find in how many ways they can be arranged. So that no two women sit next to each other. 8

20. In how many ways 12 different thing can be equally Distributed among 4 persons? If they are divided in Four groups instead to given to 4 persons. What will be the number of ways. 8

21. How many different words can be formed with the Letter of the "MATHEMATICS" ? In how many of them the vowels are together and consonants are together. 8

22. To fill 12 vacancies there are 25 candidates of which 5 are from scheduled cast. If 3 of the vacancies are reserved for scheduled cast candidates while the rest are open to all, find the number of ways in which the selection can be made. 8

23. From 5 Apples, 4 Oranges and 3 Mangoes. How many selections of fruit can be made. 8

24. In how many ways can the letters of the words "BANARAS" be arranged. So that the letters n and s are never together. 8

25. What is permutation and combination and given formula. 8

26. There are 10 professors and 20 students out whom a committee of 2 professors and 3 students to be formed. Find how many ways these committees can be 8

formed if

(a) a particular professor is included?

(b) a particular professor is excluded?

27. If $2n_{c3}: n_{c3} :: 11: 1$ find n. 8

28. Find the value of n if 8

$2n_{c3} = 100 \times n_{p2}$

29. There are 50 students in a class of a college. In how many ways can they select 3 representatives for the college union? 8

30. Find n if $n_{c6} : n\text{-}3_{c3} = 33:4$ 1