1. Permutation is also known as selection.
a) True
b) False

2. ${}^{n}P_{r}$ = _____
a) n!
b) n!r!
c) n!(n−r)!
d) n!(n−r)!r!

3. 6! = _____
a) 24
b) 120
c) 720
d) 8

4. 7!5! = _____
a) 7
b) 42
c) 230
d) 30

5. 10010!=18!+x9!. Find x.
a) 1
b) 2
c) 3
d) 4

6. ${}^{n}P_{0}$ = _____
a) n!
b) 1
c) 1(n)!
d) (n-1)!

7. ${}^{n}P_{n}$ = _____
a) n!
b) 1
c) 1(n)!
d) (n-1)!

8. The number of permutations of n different objects taken r at a time, where repetition is allowed is _____
a) n!
b) r!
c) ${}^{n}P_{r}$
d) n^{r}

9. Find the number of permutations of word **DEPENDENT**.
a) 13240
b) 15120

c) 16620
d) 17230

10. Find the number of 5 letter words which can be formed from word **IMAGE** without repetition using permutations.
a) 20
b) 60
c) 120
d) 240

11. Find the number of 4 letter words which can be formed from word **IMAGE** using permutations without repetition.
a) 20
b) 60
c) 120
d) 240

12. Find the number of 4 letter words which can be formed from word **IMAGE** if repetition is allowed.
a) 120
b) 125
c) 625
d) 3125

13. How many 3-digit numbers are possible using permutations without repetition of digits if digits are 1-9?
a) 504
b) 729
c) 1000
d) 720

14. How many 3-digit numbers are possible using permutations with repetition allowed if digits are 1-9?
a) 504
b) 729
c) 1000
d) 720

15. If ${}^{n}P_3 = 4*{}^{n}P_2$. Find n.
a) 3
b) 2
c) 6
d) 5

16. ${}^{4}P_r = 4*{}^{5}P_{r-1}$. Find r.
a) 1
b) 2
c) 3
d) 4

17. Find the number of different 8-letter arrangements that can be made from the letters of the word **EDUCATION** so that all vowels occur together.
a) 40320
b) 37440
c) 1440
d) 2880

18. Find the number of different 8-letter arrangements that can be made from the letters of the word **EDUCATION** so that all vowels do not occur together.
a) 40320
b) 37440
c) 1440
d) 2880

19. In how many ways 2 red pens, 3 blue pens and 4 black pens can be arranged if same color pens are indistinguishable?
a) 362880
b) 1260
c) 24
d) 105680

20. Find the number of words which can be made using all the letters of the word **IMAGE**. If these words are written as in a dictionary, what will be the rank of **MAGIE**?
a) 97
b) 98
c) 99
d) 100

ANSWERS- ANSWERS-1.(B) 2.(C) 3.(C) 4.(B) 5.(A) 6.(B) 7.(A) 8.(D) 9.(B) 10.(C)

11.(C) 12.(C) 13.(A) 14.(B) 15.(C) 16.(A) 17.(D) 18.(B) 19.(B) 20.(C)