

Chapter End Test

Date : _____	Mathematics Topic : Permutation and Combination	BATCH
Duration: 45 Min. Max. Marks : 25		XI

Disclaimer: The objective is to test the understanding of the children. For long question is to write coherently in more than one paragraph.

General instruction:

1. This paper consist of two Sections. Students has to attempt both sections.
2. Section – A is objective carry 1 mark each.
3. Section – B is subjective.

[Section – A]

1. If ${}^nC_{12} = {}^nC_8$, then n is
(a) 20 (b) 12
(c) 6 (d) 30
2. If ${}^nC_r + {}^nC_{r+1} = {}^{n+1}C_x$, then x is
(a) r (b) $r - 1$
(c) n (d) $r + 1$
3. A coin is tossed 3 times and the outcomes are recorded, then number of possible outcomes are
(a) 6 (b) 8
(c) 3 (d) 16
4. How many 3 digit even number can be formed form the digit 1, 2, 3, 4, 5, 6
(a) 120 (b) 60
(c) 90 (d) 108
5. $4! - 3!$
(a) $1!$ (b) $4!$
(c) 18 (d) 24
6. If $\frac{1}{8!} + \frac{1}{9!} = \frac{x}{10!}$, then x is
(a) 10 (b) 90
(c) 100 (d) 80
7. How many 4 digit numbers are there with no digit repeated
(a) $9 \times 8 \times 7 \times 6$ (b) $10 \times 9 \times 8 \times 7$
(c) $9 \times 9 \times 8 \times 7$ (d) $9 \times 9 \times 9 \times 9$
8. How many words with or without meaning can be made from the letter of word MONDAY, if all letters are used but first letter is a vowels.
(a) 720 (b) 240
(c) 48 (d) 26
9. How many chords can be drawn through 21 points on a circle?
(a) 21 (b) 42
(c) 210 (d) 420
10. How many 6 digit numbers can be formed from the digits 0, 1, 3, 5, 7 & 9 which are divisible by 10?
(a) 120 (b) 720
(c) 121 (d) 240

- 11.** What is number of ways of choosing 4 cards from a pack of 52 playing cards such that all four cards of same suit
 (a) ${}^{13}C_1 \times {}^{13}C_1 \times {}^{13}C_1 \times {}^{13}C_1$ (b) ${}^{13}C_4$
 (c) ${}^{13}C_4 \times 4$ (d) ${}^{52}C_4$
- 12.** How many ways can one select a cricket team of eleven from 17 players in which only 5 players can bowl, if each cricket team of 11 must include exactly 4 bowlers?
 (a) ${}^{17}C_{11} \times {}^5C_4$ (b) ${}^{12}C_7 \times {}^5C_4$
 (c) ${}^{12}C_7 \times {}^5C_4$ (d) ${}^{17}C_{11}$
- 13.** If ${}^{n-1}p_3 : {}^np_4 = 1 : 9$, find n
 (a) 4 (b) 9
 (c) 13 (d) 10
- 14.** The number of arrangements of the letters of the word INDEPENDENCE, such that all the vowels always occur together.
 (a) $5! \times 7!$ (b) $\frac{5!}{4!} \times 7!$
 (c) $\frac{5!}{4!} \times \frac{7!}{2! \times 3!}$ (d) $\frac{12!}{4! \times 2! \times 3!}$
- 15.** Given 5 flag of different colours, how many different signals can be generated, if each signal requires the use of 2 flags, one below the others?
 (a) 9 (b) 10
 (c) 20 (d) 6

[Section – B]

- 16.** Find the number of words with or without meaning which can be made using all the letter of the word AGAIN. If these words are written as in dictionary what will be the 50th word. **[4]**
- 17.** (a) How many numbers greater than 1000000 can be formed by using the digit 1, 2, 0, 2, 4, 2, 4. **[6]**
 (b) Find the number of different 8 letter arrangements that can be made from the letters of the word DAUGHTER so that
 (i) All vowels occur together
 (ii) All the vowels do not occur together
- OR**
- (a) In how many ways can the letters of the word PERMUATIONS be arranged, if the
 (i) Vowel are all together
 (ii) There are always 4 letter between P and S **[6]**
- (b) From a class of 25 students, 10 are to be chosen for an excursion party. There are 3 students who decide that either all of them will join or none of them will join. In how many ways can the excursion party be chosen?

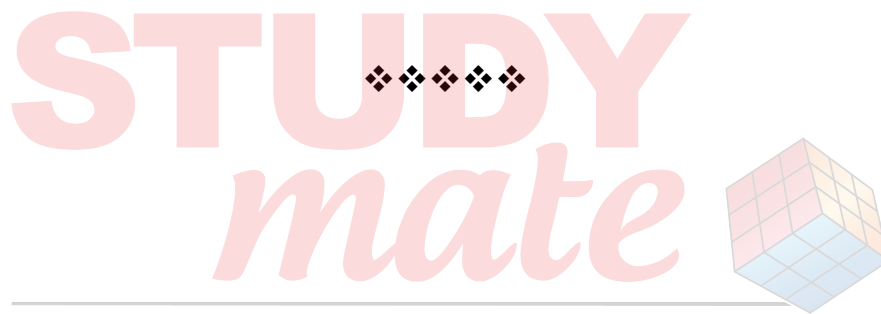


Hints/Solutions to Chapter End Test

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[Section – A]

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|---------|---------|
| 1. (a) | 2. (d) |
| 3. (b) | 4. (b) |
| 5. (c) | 6. (c) |
| 7. (c) | 8. (b) |
| 9. (c) | 10. (a) |
| 11. (c) | 12. (b) |
| 13. (b) | 14. (c) |
| 15. (c) | |



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