

O. P. JINDAL SCHOOL, SAVITRI NAGAR**Weekly Test -3 (2025 – 2026)****Class : XI****Subject: Applied Mathematics****Max Marks : 20****Time: 1 Hour****General Instructions:**

- (i) All the questions are compulsory.
- (ii) The question paper consists of 13 questions divided into 3 sections. Section A has 8 questions of 1 mark each, section B has 3 questions of 2 marks and section C has 2 questions of 3 marks each.
- (iii) There is no overall choice. However, internal choice has been provided in 2 questions You have to attempt only one of the alternatives in all such questions.
- (iv) Use of calculator is not allowed but logarithm table is allowed.

Section – A

- The number of 4 digit numbers that can be formed with the digits 3, 6, 8,9 and using each digit once is?
(a) 256 (b) 24 (c) 100 (d) 96
- If 'MAHENDRA' is coded as 'OCJGPFTC' then 'DINESH' is coded as?
(a) FKPGUJ (b) GLQHVK (c) BGLCQF (d) EJDFTI
- In a code language 'TAPE' is written as '4825', 'SMART' is written as '91834' and 'BONE' is written as '7605', then how is 'BASERA' ?:
(a) 789198 (b) 785198 (c) 789538 (d) 789138
- In a certain language; 321 means 'Glass of Tea', 426 means 'Tea is Brown', 796 means 'Trunks are Brown'. Which of the following represents 'is' in that language?
(a) 6 (b) 7 (c) 4 (d) 2
- Which of the following relations is a function ?
(a) $R = \{(4,6), (3,9), (7,6), (3,11)\}$ (b) $R = \{(1,2), (2,4), (4,6), (2,5)\}$
(c) $R = \{(2,1), (3,4), (5,6), (6,7)\}$ (d) $R = \{(2,7), (6,9), (9,6), (2,1)\}$
- In how many ways a committee consisting of 3 men and 2 women can be chosen from 7 men and 5 women?
(a) 45 (b) 350 (c) 4200 (d) 230
- 3 persons enter a railway carriage where there are 5 vacant seats. In how many ways they can seat themselves?
(a) 27 (b) 125 (c) 60 (d) 120
- A woman introduces a man as the son of the brother of her mother. How is that man related to the woman?
(a) Son (b) Uncle (c) Nephew (d) Cousin

Section – B

9. A function f is defined by $f(x) = 2x - 1$ where $x \in \{-2, -1, 0, 1, 2\}$. Find the range of f ?
10. Convert the following product into factorials:
 $6 \times 7 \times 8 \times 9 \times 10 \times 11 \times 12$
11. There are 4 doors in Lotus Temple. In how many ways can a person enter the temple and leave by a different door?

OR

Find the number of permutations of the letters of the word 'HYDERABAD'

Section – C

12. Find the domain and range of the function

$$f(x) = \sqrt{16 - x^2}$$

13. Prove that $(n+2)n! = n! + (n+1)!$

OR

Everybody in a room shakes hand with everybody else in the room. The total number of hand shakes is 66. How many people are there in the room?

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