

EVERWIN MATRIC. HR. SEC. SCHOOL

25.10.19 TT Mathematics Time: 45 Mins
 STD: XI (A-D) Marks: 30

- I. Choose the correct answer: $5 \times 1 = 5$
- The number of rectangles that a chessboard has _____.
 a) 81 b) 64 c) 9^9 d) 1296
 - $1+3+5+7+\dots+17$ is equal to _____.
 a) 101 b) 81 c) 71 d) 61
 - In ${}^{2n}C_3 : {}^nC_3 = 11:1$ then n is _____.
 a) 5 b) 6 c) 7 d) 11
 - If ${}^nC_4, {}^nC_5, {}^nC_6$ are in A.P then value of n can be _____.
 a) 14 b) 11 c) 9 d) 5
 - In 3 fingers, the no., of ways 4 rings can be worn in ____ ways.
 a) 4^3-1 b) 3^4 c) 68 d) 64

II. Answer any 5 of the following: $5 \times 5 = 25$

- By principle of Mathematical Induction prove that $n \geq 1$

$$1^2+3^2+5^2+\dots+(2n-1)^2 = \frac{n(2n-1)(2n+1)}{3}$$
- Using Mathematical Induction, show that for any natural number $n \geq 2$

$$\frac{1}{1+2} + \frac{1}{1+2+3} + \frac{1}{1+2+3+4} + \dots + \frac{1}{1+2+3+\dots+n} = \frac{n-1}{n+1}$$
- Use induction to prove that n^3-7n+3 is divisible by 3, for all natural numbers n.
- Prove that $3^{2n+2}-8n-9$ is divisible by 8 for all $n \geq 1$
- By Mathematical Induction, show that for any natural number n,

$$\frac{1}{2.5} + \frac{1}{5.8} + \frac{1}{8.11} + \dots + \frac{1}{(3n-1)(3n+2)} = \frac{n}{6n+2}$$
- By Mathematical Induction, prove that $n \geq 1$

$$1^3+2^3+3^3+\dots+n^3 = \left(\frac{n(n+1)}{2}\right)^2$$

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25.10.19 TT Commerce Time: 45 Mins
 STD: XI (E,F,G) Marks: 30

- I. Answer the following: $5 \times 6 = 30$
- List out the various sources of financing.
 - Write short notes on:
 a) Retained earnings b) Lease financing
 - Write short notes on:
 a) Owner's funds b) Borrowed funds
 - What are the different types of short term finances given by commercial banks?
 - Explain any four personal investment avenues.

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25.10.19 TT Economics Time: 45 Mins
 STD: XI (H,I) Marks: 30

- I. Fill in the blanks: $10 \times 1 = 10$
- The Goods and Services Tax Act came into effect on _____.
 - Goods and Services Tax is _____.
 - ICAR - _____
 - MRTTP - _____
 - Value Added Tax is _____.
 - The first ever SEZ in India was set up at _____.
 - SEZs - _____
 - GST - _____
 - The special Economic Zones Policy was announced in _____.
 - New Foreign Trade Policy was announced on _____.
- II. Answer any 2 in detail: $2 \times 10 = 20$
- Describe the salient features of EXIM policy (2015-2020).
 - Explain the objectives and characteristics of SEZs.
 - Discuss the important initiatives taken by the Government of India towards Industrial Policy.