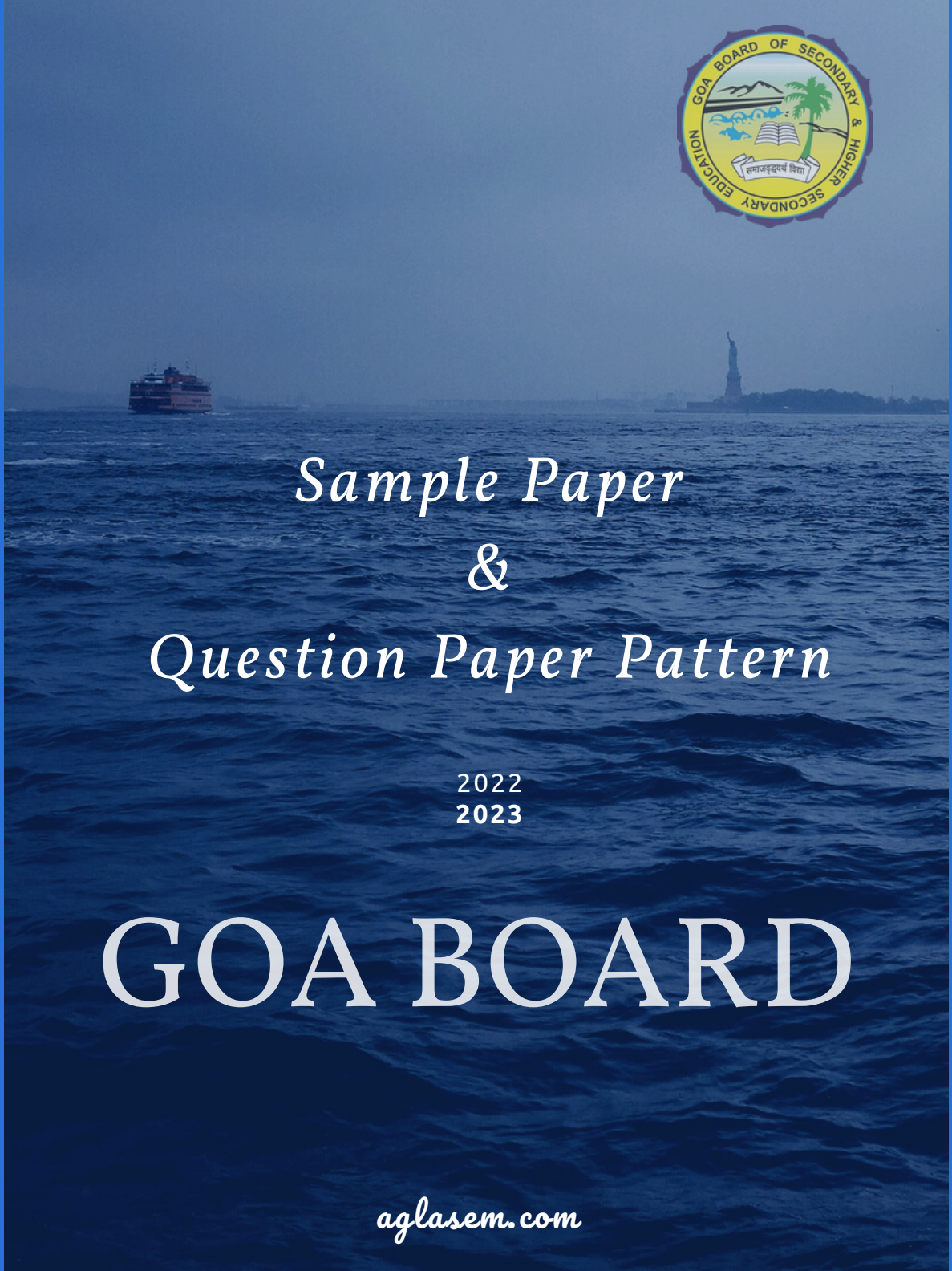


Sample Paper
&
Question Paper Pattern

2022
2023

GOA BOARD

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Model question paper for online exam

Sub: Mathematics Time: 1 hr

Std: XI Commerce Marks: 20

INSTRUCTIONS: Questions 1 – 2 are MCQ type and carry **1 mark** each; question 3 – 4 are VSA type and carry **1 mark** each; question 5 – 9 are SA type and carry **2 marks** each; question 10 – 11 are LA type and carry **3 marks** each.

Questions 1 – 2 carry **1 mark** each.

Q.1. If A is the subsets of the universal set U, then $A \cap (A \cup \varnothing)$ = _____

(i) A (ii) B (iii) $\varnothing$ (iv) $\cup$

Q.2. Common difference of an arithmetic progression for which $a_1 = 5$ and $a_6 = 30$ is _____

(i) 5 (ii) 10 (iii) 15 (iv) 20

Questions 3 – 4 carry **1 mark** each.

Q.3. If A = $\{x : x \in N\}$ and B = $\{x : x \in N, x^2 + 4x - 5 = 0\}$, then find A $\cap$ B

Q.4. Solve $2x - 2 < 5x + 1$

Questions 5 – 9 carry **2 marks** each.

Q.5. In a school, 150 students were found to be drinking tea and 225 drinking coffee and 100 were drinking both tea and coffee. Find how many students were drinking tea or coffee.

Q.6. For the set $A = \{x : x = 2^n, n \in N, 1 \le n \le 5\}$ and $B = \{x : x = 2n, n \in N, 1 \le n \le 5\}$, Find $A \cup B$ and $A \cap B$

Q.7. Solve the inequation

$$\frac{5x-2}{3} - \frac{7x-3}{5} > \frac{x}{4}$$

Q.8. Insert 3 numbers between 2 and 32 such that the resulting sequence is a G.P.

Q.9. Find the nth term of an A.P. whose 6^{th} term is 12 and the 8^{th} term is 22.

Questions 10 & 11 carry **3 marks** each.

Q.10. Determine the number of terms in the A. P. 3, 7, 11, . . . , 407. Also, find their sum.

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OR

Find the sum of all odd numbers between 100 and 200

Q.11. Solve the following system of linear inequations graphically

$2x+y \leq 6$;

$3x+4y \leq 12$;

$x \geq 0$;

$y \geq 0$.

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BLUE PRINT

SUB: MATHEMATICS DURATION: 1 HOUR

STD: XI COMMERCE MARKS: 20

SR NO	Content area	objectives																total
		Knowledge				Understanding				Application				Skill				
	Type	MCQ	VSA	SA	LA	MCQ	VSA	SA	LA	MCQ	VSA	SA	LA	MCQ	VSA	SA	LA	
	MARKS	1	1	2	3	1	1	2	3	1	1	2	3	1	1	2	3	
1.	SETS					1(A)	3 (A)	6(E)				5 (A)						
2.	LINEAR INEQUALITIES						4(E)	7(A)									11 (A)	
3	SEQUENCES &SERIES					2(A)		8(E), 9(A)					10 (O) (D)					
						12				5				3				

OBJECTIVES:

KNOWLEDGE - 0

UNDERSTANDING- 12 MKS(60%)

APPLICATION – 5 MKS(25%)

SKILL – 3 MKS(15%)

DIFFICULTY LEVEL:

EASY: 5 MKS (25%)

AVERAGE: 12 MKS(60%)

DIFFICULT: 3 MKS(15%)

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EXPECTED TIME FOR DIFFERENT TYPES OF QUESTION:

S.NO.	FORM OF QUESTION	Approx. time for each question in mins(t)	Number of questions(n)	Approx. time for each form of quest. In mins. (n x t)
1.	MCQ (1 mk each)	2 min	2	4
2.	VSA(1 mk each)	3 min	2	6
3	SA(2 mks each)	6 min	5	30
4.	LA(3 mks each)	8 min	2	16
			11	56 min. (4 min. for re-checking)

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Model question paper for online exam

Sub: Mathematics Time: 1 hr

Std : XI Science Marks: 20

INSTRUCTIONS : Questions **1- 2** are MCQ type and carry **1 mark** each ; questions **3 – 4** are VSA type and carry **1 mark** each ; question 5 to 9 are SA type and carry 2 marks each; questions 10 & 11 are LA type and carry 3 marks each.

Questions **1- 2** carry **1 mark** each.

Q. 1. Select and write the correct alternative.

A = { x / x is prime number } , B = { $x/x^2 - x - 6 = 0$, $x \in Z$ } , then $A \cap B$ is --------

i) ϕ ii) {3} iii) {2} iv) { 3, 2}

Q.2. The set of values of $x \in R$ such that $\frac{3(x-2)}{5} \leq \frac{5(2-x)}{3}$ is _____

i) $[2,\infty)$ ii) $(-\infty,2]$ iii) $)(-\infty,-2)$ iv) $)[-2,\infty)$

Questions **3 – 4** carry **1 mark** each.

Q.3. A = {1, ϕ} , then write the Power set of A.

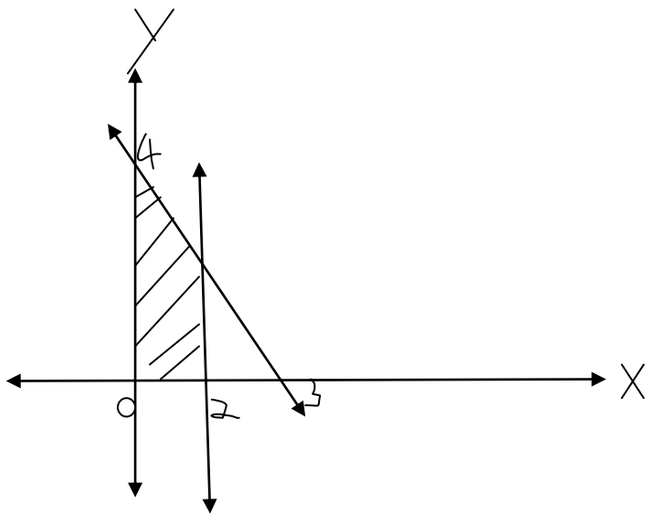
Q.4. If the n th term of the sequence 9, 5, 1, -3……. is -35 . Find the value of n.

Question 5 to 9 carry 2 marks each.

Q.5. The sum of the 3rd and 4th term of a G.P is 60 and product of its first 3 terms is 1000. If the first term is positive then find its 7th term.

Q.6. If five times the 5th term is equal to 10 times the 10th term of an A.P , then calculate its 15th term.

Q.7. Write the linear inequalities for the following shaded region.



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Q.8. In a School there are 800 students appearing for Public Exam . If 25% of the students answer Mathematics, 15% answer Biology and 40 students answer both Mathematics and Biology. How many students answer Mathematics or Biology.

Q.9. $A= \{ x/ x= 3^n , n \in N, n \leq 6\}$,$B= \{ x/ x= 9^n , n \in N, n \leq 6\}$. write $A \cap B$ in roster form.

Questions 10 & 11 carry 3 marks each

Q. 10. Solve the following system of linear inequations graphically.

$X + 2y \leq 8$

$-x + y \geq 1$

$X - y \leq 0$

$x, y \geq 0$

Q 11. A person saves Rs 500 in each of 4 months of his service . In each of the subsequent months his saving increases by 50 more than the saving of immediate previous month. In how many months his total earnings will be 13050?

OR

A square is drawn by joining the mid points of a given square . A third square is drawn inside the 2^{nd} square in the same way and the process continues. The side of the first square is 20 cm. how many such squares can we construct so that the sum of their areas is 775?

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