



INDIAN SCHOOL AL WADI AL KABIR

REVISION QUESTIONS (2026-27)

Sub: MATHEMATICS

Class: XI

General Instructions:

1. This Question paper contains - five sections A, B, C, D and E. Each section is compulsory. However, there are internal choices in some questions.
2. Section A MCQ's and 02 Assertion-Reason based questions of 1 mark each.
3. Section B has Very Short Answer (VSA)-type questions of 2 marks each.
4. Section C has Short Answer (SA)-type questions of 3 marks each.
5. Section E has source based/case based/passage based/integrated units of assessment (4 marks each) with sub parts.

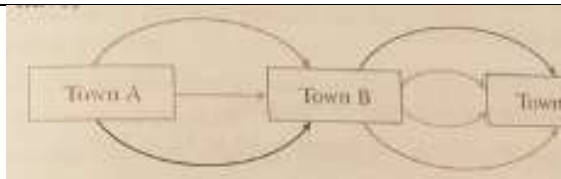
Section A

PART-1(MCQ-1 mark each)

Q.1.	Which of the following represents the solution set for $-3x + 12 \leq 0$?							
	A	$(-\infty, 4]$			B	$[4, \infty)$		
	C	$(-\infty, -4]$			D	$[-4, \infty)$		
Q.2.	$A = \{1,2,3\}, B = \{2,3,4\}, C = \{2,3,5\}, D = \{1,3,5,7\}$. Find $(A \cup B) \cap (C \cup D)$.							
	A	Set A	B	Set B	C	Set C	D	Set D
Q.3.	Which of the following is not a function?							
	A	$\{(-1,1), (-2,4), (2,4)\}$			B	$\{(1,2), (1,4), (2,5), (3,8)\}$		
	C	$\{(1,1), (2,2), (3,3)\}$			D	$\{(1,2), (2,4), (3,6)\}$		
Q.4.	If $\frac{3x+1}{x-4} \leq 2$, then x belongs to which interval?							
	A	$(-9,4]$	B	$[-9,4)$	C	$(-\infty, -9] \cup (4, \infty)$	D	$(-9,4)$
Q.5.	$A = \{x \in \mathbb{Z} : -3 \leq x < 4\}$ and $B = \{x \in \mathbb{Z} : x^2 < 9\}$, then $A \cup B$ is:							
	A	$\{-3, -2, -1, 0, 1, 2\}$	B	$\{0, 1, 2, 3\}$	C	$\{-2, -1, 0, 1, 2\}$	D	$\{0, 1, 2, 3\}$
Q.6.	The solution of $ x < 3$							
	A	$X < 3$	B	$-3 < X < 3$	C	$3 < x$	D	$X < 0$
Q.7.	Conjugate of $1 + i + i^2 + i^4 + i^6$.							

	A	0	B	1	C	i	D	-i
Q.8.	L = {x: x is a positive integer less than 6} and M = {x: x is a positive integer and multiple of 2} LUM is equals to							
	A	{1,2,3,4,5,6}	B	{3,4,5,6 ...}	C	{1,2,3,4,5,6,8,10 ...}	D	{1,2,3,4,5,6,7 ...}
Q.9.	multiplicative inverse of $1 - 2i$							
	A	$\frac{1}{5} - \frac{2}{5}i$	B	$\frac{1}{5} + \frac{2}{5}i$	C	$\frac{2}{5} + \frac{1}{5}i$	D	$\frac{1}{5} + \frac{1}{5}i$
Q.10.	If R is a relation from A to B, n(A)=2 and n(B)=3. Then the total number of relations possible:							
	A	6	B	2^6	C	24	D	12
Q.11.	The value of $\cos 2^\circ \cos 4^\circ \cos 6^\circ \cdots \cos 178^\circ$ is equal to ____							
	A	1	B	10	C	0	D	2
Q.12.	$\sin 330^\circ + \cos 300^\circ$							
	A	0	B	1	C	2	D	4
Q.13.	Value of $(\sqrt{2} + 3i)(\sqrt{2} - 3i)$?							
	A	10	B	11	C	-5	D	5
Q.14.	LCM of 5!,6! And 7!							
	A	5!	B	7!	C	6!	D	210
Q.15.	There are 3 multiple choice questions and each question has 4 choices. Number of maximum attempts in which a student can fail to get all answer correct is:							
	A	11	B	12	C	27	D	63
Q.16.	In how many ways 7 pictures can be hanged on 9 pegs?							
	A	7!	B	9!	C	$\frac{9!}{2}$	D	$\frac{7!}{2}$
Q.17.	The median of the data 11,29,17,21,13,31,39,19 is							
	A	20	B	19	C	21	D	29
Q.18	The standard deviation of a data set is 5. If all the observations are multiplied by 3, what is the new variance?							
	A	75	B	25	C	45	D	225

	Section A PART-2 ASSERTION AND REASON TYPE QUESTIONS (1 mark)
	Direction for questions 19 & 20: In question numbers 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A) (b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A) (c) Assertion (A) is true but reason (R) is false. (d) Assertion (A) is false but reason (R) is true.
Q.19.	Assertion(A): The ratio of the radii of two circles at the centers of which two equal arcs subtend angles of 30° and 70° is 21:10. Reason(R): The radian measure of an angle subtended at the centre of a circle by an arc is equal to the ratio of the length of the arc to the radius of the circle
Q.20.	Assertion (A): $\sqrt{-4} \times \sqrt{-9} = 6$ Reason (R): $\sqrt{a} \times \sqrt{b} = \sqrt{ab}$ when at least one out of a and b is positive
	Section B (2 marks each)
Q.21.	If $A = \{3, 5, 7, 9, 11\}$, $B = \{7, 9, 11, 13\}$, $C = \{11, 13, 15\}$, $D = \{15, 17\}$, Find (a) $(A \cup B) \cap C$ (b) $C - D$
Q.22.	If $\sin A = \frac{-3}{5}$ and A lies in 3rd Quadrant Find $\cos A + \sec A$ OR A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second?
Q.23.	If $A = \{1,2,3\}$, $B = \{2,3,4\}$, $C = \{2,3,5\}$, $D = \{1,3,5,7\}$. Find $(A \times B) \cap (C \times D)$. OR Find the range of $f(x) = x$, x is a real number.
Q.24.	Solve for x: $5 \leq \frac{2x+7}{3} \leq 9$
Q25.	a) Sandy has 5 shirts,4 pants,3 pairs of socks and 2 pairs of shoes. In how many different ways can he dress himself? OR b) How many distinct triangles can be made using 10 points in a plane out of which 4 points are collinear.
	Section C (3 marks each)

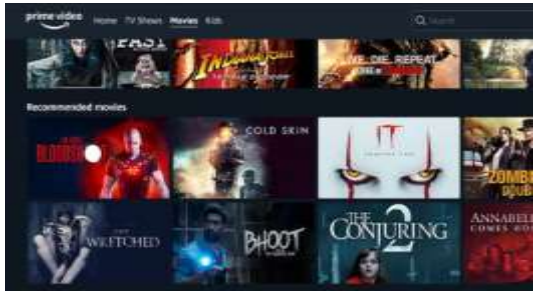
Q.26.	A student needs an average of at least 85 marks in five tests to qualify for a scholarship. If his marks in the first four tests are 78, 92, 81, and 74, what is the minimum marks he must score in the fifth test?														
Q.27.	If ' f ' is a real function defined by $f(x) = \frac{x-1}{x+1}$ then prove that $f(2x) = \frac{3f(x)+1}{f(x)+3}$														
Q.28.	a) Express $(1-2i)^{-3}$ in the standard form. OR b) Find the multiplicative inverse of $(2+\sqrt{3} i)^2$														
Q.29.	Calculate the mean deviation about median for the following data: <table><tr><td>Class</td><td>0-10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40-50</td><td>50-60</td></tr><tr><td>Frequency</td><td>6</td><td>7</td><td>15</td><td>16</td><td>4</td><td>2</td></tr></table>	Class	0-10	10-20	20-30	30-40	40-50	50-60	Frequency	6	7	15	16	4	2
Class	0-10	10-20	20-30	30-40	40-50	50-60									
Frequency	6	7	15	16	4	2									
Q.30.	$\tan x = -\frac{5}{12}$, x lies in second quadrant. Find the value of other five trigonometric functions														
Q.31.	Deepak has 5 friends to invite for his son’s birthday party. In how many ways can he send invitation cards to them if he has four servants to carry the cards?														
SECTION D(5 MARKS)															
Q.32.	Solve the following system of linear inequalities $\frac{5x}{2} - \frac{7}{3} < x + \frac{1}{3}$ $\frac{8x - 3}{4} - \frac{8x + 5}{8} > x$														
Q.33.	If $a+ i b = \frac{c+i}{c-i}$, where c is a real number. Prove that $a^2+b^2=1$ and $\frac{b}{a} = \frac{2c}{c^2-1}$														
Q.34.	Pankaj has to travel from town A to town C via town B. There are 3 roads from A to B and 4 roads from B to C.  (a) Find the number of ways to go from A to C via B, and also the number of ways for a round trip ($A \rightarrow C \rightarrow A$) if he is allowed to use the same roads while returning. Show your reasoning clearly. (b) If he decides that he will not use any road more than once during the entire round trip, how many ways are possible now? Compare your answer with part (a) and explain why the numbers differ.														

Q.35.	Calculate the mean and variance and standard deviation for the following data:						
	Marks	20-30	30-40	40-50	50-60	60-70	70-80
	No. of students	3	51	122	141	130	51

SECTION E
(CASE STUDY QUESTIONS 4 MARKS EACH)

Q.36.	In a survey of 100 students, 60 students like Mathematics, 45 students like Physics, and 25 students like both Mathematics and Physics. Find the number of students who like: - Mathematics only - Physics only - Mathematics or Physics.	

Q.37.	The annual inter-school cultural fest was approaching, and the students of Greenwood High were buzzing with excitement. The school's drama club, which had 12 talented members, was determined to put up a spectacular performance. Among them 5 students were experts in acting, 4 were gifted in singing, and 3 were brilliant in dancing. The club mentor decided that for the final stage performance, they needed to select a team of 7 members to represent the club at the fest. However, there were some conditions to ensure a balanced and powerful performance:	
	(i) The team must have at least 1 actor, 1 singer, and 1 dancer. How many teams can be formed? (ii) The team captain must be an actor. How many teams can be formed now? (iii) The 7 selected members stand in a row. The captain must stand at the extreme right end. How many different arrangements are possible for a given team?	

38.	You are downloading a movie from an online platform. The download progress (in GB) is modeled by the function: $f(x) = \sqrt{x^2 - 16}$. Also, the movie file size is unlimited for this case study. Based on the above information, answer the following questions. - What is the Domain and range of $f(x)$? (2m) - Evaluate: $f(5) + f(-4)$ (2m)	

ANSWERS

1.	B	2.	A	3.	B	4.	B
5.	A	6.	B	7.	D	8.	C
9.	B	10.	B	11.	C	12.	A
13.	B	14.	B	15.	D	16.	C
17.	A	18.	D				
19.	D	20.	D	21.	a. {11,13} b. {11,13}		
22.	$-\frac{41}{20}$ OR 12π	23.	{(2, 3), (3, 3)} OR Set of Reals	24.	[4,10]	25.	a) 120 b) 116
26.	$x \geq 100$	27.	a) proof	28.	a) $\frac{-11-2i}{125}$ b) $\frac{1-4\sqrt{3}i}{49}$		
29.	N = 50, Median = 28 M.D. (Median) = $\frac{1}{N} \sum f_i x_i - M $ $= \frac{508}{50} = 10.16.$	30.	$\sin x = \frac{5}{13}, \cos x = -\frac{12}{13},$ $\tan x = -\frac{5}{12}, \cot x = -\frac{12}{5}, \sec x = -\frac{13}{12}, \operatorname{cosec} x = \frac{13}{5}$				
31.	A servant can carry multiple cards total number of ways = 1024	32.	the system has no solution.	33.	Represent a+ib in standard form Calculate a ² +b ²		
34.	(a) Go = 12 , Round trip (with repetition) = 144 (b) Round trip (without repeating any road) = 72	35.	$N = 500, y_i = \frac{x_i - 55}{10}, \sum f_i y_i = 5, \sum f_i y_i^2 = 705, h = 10.$ $\text{Mean} = A + \frac{\sum f_i y_i}{N} \times h = 55 + \left(\frac{5}{500}\right) 10 = 55.1.$ $\text{Variance} = \left[\frac{705}{500} - \left(\frac{5}{500}\right)^2\right] 100 = \frac{14099}{100} = 140.99.$ Standard deviation = $\sqrt{140.99} = 11.8739$				
36.	i) 35 (ii) 20 (iii) 80	37.	(i) 747 (ii) 2310 (iii) 720	38.	i) Domain: $(-\infty, -4] \cup [4, \infty)$ Range: $[0, \infty)$ ii) 3		
