Mathematics General Science Test Hard Mode

Sr	Questions	Answers Choice
1	The number of diagonals of a six sided figure are	A. 9 B. 6 C. 12 D. 3
2	If the diagonal of a square has coordinates (1, 2) and (5,6) the length of a side is	A. 3 B. 4 C. 1 D. 5
3	Total number of terms in the expansion of $(a + b)^5 + (a - b)^5$ after simplification are	A. 3 B. 1 C. 4 D. 7
4	Question Image	
5	If $ab > 0$ and $a < 0$, which of the following is negative?	A. b B. -b C. -a D. $(a - b)^2$
6	The line joining (1, 3) to (a, b) has unit gradient then	A. a-b = -2 B. a+b = 0 C. a-b + 5 D. 2a+3b=1
7	a + x is	A. A trinomial B. A binomial C. A moomial D. An equation
8	Question Image	A. 1/2 B. 3/5 C. 4/5 D. 1
9	Question Image	
10	The point (-5, 3) is the center of a circle and P(7, -2) lies on the circle. The radius of the circle is	A. 2 B. 13 C. 7 D. 8
11	If $0 < n < 1$, n is a rational number, the number of terms in the expansion of $(1 + X)^n$ are	A. n + 1 B. 2n C. Infinitely many D. $2n^2$
12	In Binomial Expansion the coefficients of the terms equidistant from beginning and end of the expansion are	A. Zero B. Same C. Equal to preceding term D. Equal to following term
13	Question Image	D. None of these
14	Multiplicative inverse of "1" is	A. 0 B. <u>+</u> 1 C. 1 D. {0, 1}
15	Question Image	D. -2-i
16	The direction cosines of y-axis are	A. 1,0,0 B. 0,1,0 C. 0,0,1 D. 1,1,1
17	Question Image	
18	Question Image	
19	Question Image	A. An equation B. Linear equation

19	Question Image	C. Rational fraction D. Identity
20	The mid point of the line joining (-1, -3) to (3, -5) is	A. (1, 1) B. (1, -1) C. (2, -8) D. (1, -4)
21	Question Image	A. (0, e) B. (0, 1) D. None
22	Question Image	
23	120 degrees are equal to how many radians?	
24	Question Image	A. n = 3 only B. n <u>></u> 5 C. n <u>></u> 3 D. n < 5
25	The Domain of f(x) = log x is	
26	Question Image	
27	6 is	A. A prime integer B. An irrational number C. A rational number D. An odd integer
28	Question Image	
29	The length of rectangle is twice as much as its breadth. If the perimeter is 120 cm, the length of the rectangle is	A. 10 cm B. 20 cm C. 30 cm D. 40 cm
30	Question Image	A. Nilpotent matrix B. Singular matrix C. Non singular matrix D. Diagonal matrix
31	Question Image	A. 1 B. 2 C. 3 D. 4
32	If in isosceles right angled triangle, one side is a then hypotenuse is	C. a D. cannot be determined by given information
33	Question Image	
34	A point of a solution region where two of its boundary lines intersect, is called	A. Boundary B. Inequality C. Half Plane D. Vertex
35	Question Image	
36	The magnitude of a vector can never be	A. Zero B. Negative C. Positive D. Absolute
37	Write the first four terms of the arithmetic sequence if a_1= 5 and other three consecutive terms are 23,26,29	A. 23, 26, 29, 32 B. 5, 8, 11, 14 C. 8, 11, 14, 17 D. None of these
38	Question Image	
39	The gradient of the line joining (1, 4) and (-2, 5) is	A. 3/8 B. -2 2/3 C. -1/3 D. 2
40	Question Image	
41	A function F(x) is called even if	A. F(x) = F(-x) B. F(x) = F(-x) C. F(x) = -F(x) D. 2F(x) = 0
42	The multiplicative inverse of x such that x = 0 is	A. -x B. does not exist

42	The multiplicative inverse of x such that x · 0 is	C. $1/x$ D. 0
43	If $4 - x > 5$, then	A. x > 1 B. x > -1 C. x < 1 D. x < -1
44	If $f_1(x)$ and $f_2(x)$ are any two anti derivatives of a function F (x), then the value of $f_1(x) - f_2(x)$ =	A. A variable B. A constant C. undefined D. infinity
45	Sin(a + b) + Sin (a - b) =	A. Sin a Cos b B. Sin a Sin b C. Sin a + Cos b D. Sin a - 2 Cos b
46	The number of ways in which we can courier 5 packets to 10 cities is	A. 2×5^0 B. 5^{10} C. 10^5 D. 2^{10}
47	If you are looking a high point from the ground, then the angle formed is	A. Angle of elevation B. Angle of depression C. Right angle D. Horizon
48	The values of n such that, in the binomial expansion of $(1 - x)^n$, co-efficient of x^2, co-efficient of x^2 is 3, are	A. -2, -3 B. 2, -3 C. -2, 3 D. None of these
49	If c is a constant number and if f is the function defined by the equation $f(x) = c$ for all values of x, then f is differentiable at every x and f is defined the equation $f(x) =$ _____	A. f B. 1 C. C D. 0
50	The value of x, and y, when $(x + iy)^2 = 5 + 4i$	A. X = 2, y = -1 B. X = -2, y = 1 C. X = 2, y = -1 D. X = 2, y = 2
51	A farmer possesses 100 hectometers of land and wants to grow corn and wheat. Cultivation of corn requires 3 hours per hectometer while cultivation of wheat requires 2 hours pert hectometer. Working hours cannot exceed 240. If he gets a profit of Rs. 20 per hectometer for corn and Rs. 20 per hectometer for wheat. The profit function for the farmer is	A. P(x,y) = 20x + 15y B. P(x,y) = 2x + 3y C. P(x,y) = x + y D. P(x,y) = 3x + 2y
52	Question Image	A. 0 B. 1 C. -1 D. 2
53	The difference of two consecutive terms of an A.P. is called	A. Constant of series B. Common ratio C. Common difference D. General term
54	If the angle of a triangle are in the ratio 2:3:7, the triangle is	A. Obtuse B. Acute C. Right angle D. Isosceles
55	Question Image	
56	Complex roots of real quadratic equation occur in	A. Conjugate pair B. ordered pair C. reciprocal pair D. quadratic function
57	A line segment whose end points lie on a circle is called	A. The secant of the circle B. The arc of the circle C. The chord of the circle D. The circumference of the circle
58	Which is an explicit function	D. All
59	In the expansion of $(a + b)^n$ in every term the sum of the exponents of a and b is	A. n B. n + 1 C. 2n - 1 D. 2n + 1
60	Question Image	A. 15 B. 60 C. 90 D. 20
61	The ... diff ... of the ... 7, 4, 1 ... is	A. 1 B. -3

61	The common difference of the sequence 7,4,1, ... is	C. 5 D. 0
62	Question Image	
63	The conic is a parabola if	A. e < 1 B. e > 1 C. e = 1 D. e = 0
64	What is the domain of $y = Cot^{-1}x$?	A. Set of irrational number only B. Set of all real numbers C. Set of intergers only D. Set of complex numbers only
65	Question Image	
66	In the expansion of $(a + b)^n$ in every term the sum of the exponents of a and b is	A. n B. n + 1 C. 2n - 1 D. 2n + 1
67	Question Image	A. A polynomial B. An inequality C. An identity D. A linear function
68	Question Image	A. 30<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">° B. 45<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">° C. 60<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">° D. 90<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">°
69	If 2 Sin x Cos 2 x = Sin x then?	
70	A standard deck of 52 cards is shuffled. What is the probability of choosing the queen of the diamonds	A. 1/5 B. 1/13 C. 5/52 D. 1/52
71	A fraction in which the degree of the numerator is less than the degree of the denominator is called	A. Polynomial B. Proper fraction C. Rational fraction D. Mixed fraction
72	Question Image	
73	Question Image	A. 0 B. -25 C. 5 D. 45
74	Question Image	A. A < G < H B. A > G > H C. A < G > H D. A > G < H
75	Question Image	A. 15 B. 15 i C. -15 i D. -15
76	What is the period of Cot x?	
77	In a school, there are 150 students. Out of these 80 students enrolled for mathematics class, 50 enrolled for English class, and 60 enrolled for Physics class. The student enrolled for English cannot attend any other class, but the students of mathematics and Physics can take two courses at a time. Find the number of students who have taken both physics and mathematics	A. 40 B. 30 C. 50 D. 20
78	Question Image	
79	The perpendicular bisector of any chord of a circle	A. Passes through the centre of the cirle B. Does not pass through the centre of the circle C. May or may not pass through the centre of the cirlce D. None of these
		A. 0.707

80	Cos 315°=	B. 0.5 C. 1 D. 0
81	Question Image	A. Both A,B have the same number of columns B. Both A and B do not have the same order C. Number of col A is same as number of rows of B D. Number of rows of A is same as number of col of B
82	If A = (3, 8) and B = (5, 6), then the distance between A and B is	B. 2 C. 1 D. 6
83	Question Image	
84	Question Image	
85	Question Image	A. A + B B. C²/AB C. A²/BC D. B²/AC
86	Question Image	D. None
87	The associative angle of 280°is	A. 100<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">° B. 10<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">° C. 80<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">° D. -80<b style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: 16px;">°
88	Which is not a half plane	A. ax + by < c B. ax + by > c C. Both A and B D. None
89	Question Image	A. p < r B. p > r C. p + r < 0 D. p - r < 0
90	In 30,60,90 triangle, if the smallest side is 6 then the side opposite to the angle of 60°is	A. 12 B. 3 D. 6
91	Question Image	
92	The value of the polynomial $3x^3+ 4x^2- 5x + 4$ at x = -1 is	A. 12 B. 1 C. 10 D. -10
93	Question Image	
94	Question Image	A. 1 B. 2 C. 3 D. 4
95	The graph of a quadratic function is	A. Circle B. Ellipse C. Parabola D. Hexagon
96	Question Image	D. None
97	The set {{a,b}} is	A. Infinite set B. Singleton set C. Two points set D. None
98	Question Image	A. 0 B. -2 C. 1 D. 4
		A. 90<b style="color: rgb(34, 34, 34);

99	An angle of one radian is equivalent to	B. 60° C. 67° D. 57° 18'
100	Period of Sin 2x =	
101	Two natural numbers whose sum is 25 and difference is 5, are	A. 25, 20 B. 20, 10 C. 20, 5 D. 15, 10
102	Question Image	A. An irrational number B. Whole number C. A positive integer D. A rational number
103	The sum of the interior angles for a 16 sided polygon is	A. 4 pie B. 14 pie C. 8 pie D. 2 pie
104	Question Image	A. Free vector B. Null vector C. Unit vector D. None of these
105	Question Image	
106	Question Image	
107	If 1 + Cos x = 0, then x =	
108	Question Image	
109	For which of the following ordered pairs (s, t) is s + t > 2 and s - t < -3?	A. (3, 2) B. (2, 3) C. (1, 8) D. (0, 3)
110	The equation of the normal to the circle $x^2 + y^2 = 25$ at(4, 3) is	A. 3x - 4y = 0 B. 3x - 4y = 5 C. 4x + 3y = 5 D. 4x + 3y = 25
111	The complement of set A relative to universal set U is the set	D. A - U
112	If x < y, 2x = A, and 2y =B, then	A. A = B B. A < B C. A < x D. B < y
113	The constant distance of all points of the cirlce from its centre is called the	A. Radius of the circle B. Secant of the circle C. Chord of the circle D. Diameter of the circle
114	Question Image	A. 1 B. 2 C. 3 D. 4
115	If the sum of the roots of the equation $ax^2 - 2x + 2a = 0$ is equal to their product, then the value of a is	A. 1 B. 2 C. 3 D. 4
116	What is a proper rational fraction?	D. All are proper rational fractions
117	Which of the following is the subset of all sets?	B. {1, 2,3} D. {0}
118	The sum of the series 1+5+9+13+17+21+25+29 is	A. 140 B. 130 C. 120 D. 110
119	Question Image	D. None of these

		D. None of these
120	If any two rows (or any two columns) of a square matrix are inter changed, the determinant of the resultant matrix is	A. Same as the original determinant B. Additive inverse of the original determinant C. Both A and B D. Adj of the original matrix
121	If $Z = (1,2)$, then $Z^{-1} = $?	A. (0.2, 0.4) B. (-0.2, 0.4) C. (0.2 , -0.4) D. (-0.2, -0.4)
122	Unit vector in the positive direction of x-axis is	D. All
123	Question Image	
124	The set of the first elements of the ordered pairs forming a relation is called its	A. Function on B B. Range C. Domain D. A into B
125	If a statement $S(n)$ is true for $n = 1$ and the truth of $S(n)$ for $n + K$ implies the truth of $S(n)$ for $S(n) = K + 1$, then $S(n)$ true for all	A. All Real numbers B. All integers C. Positive integers D. All complex numbers
126	Which of the following is the equation of a line with slope 0 and passing through the point (4, 3)	A. $X = 4$ B. $X = -4$ C. $Y = 3$ D. $Y = -6$
127	A vector of magnitude zero is called	A. Position vector B. Null vector C. Free vector D. None of these
128	Question Image	D. None
129	Which of the vectors have opposite direction?	D. Both A and B
130	In general matrices do not satisfy	A. Commutative law w.r.t multiplication B. Associative law w.r.t addition C. Distributive law w.r.t addition D. Multiplication of a scalar with the matrix
131	The equation of the line with gradient 1 passing through the point (h, k) is	A. $Y = x + k - h$ B. $Y = k/h \, x + 1$ C. $Y = x + h - k$ D. $Ky = hx - 1$
132	If the 19th term of A.P is 8 and the 4th term is 20, then the first term is	A. 20.2 B. 25.5 C. 27.5 D. 37.5
133	Question Image	
134	If $P(E)$ is the probability that can event will occur, then $P(E) = $	A. 1 B. 0.5 C. 2 D. 0
135	If the sum of the roots of $(a + 1)x^2 + (2a + 3)x + (3a+4) = 0$ is -1, then product of the roots is	A. 1 B. 2 C. -2 D. -1
136	If a cone is cut by a plane perpendicular to the axis of the cone, then the section is a	A. Parabola B. Circle C. Hyperbola D. Ellipse
137	If A and B are matrices of same order than $(,A + B)(A + B) = $	A. $A^2 + B^2$ B. $A^2 + B^2 + 2AB$ C. $A + B$ D. $A^2 + B^2 + AB + BA$
138	Question Image	A. A positive integer B. A negative integer C. A natural number D. An irrational number
		A. 5 B. 12

139	Two dice are rolled. The number of possible outcome in which at least one die shows 2 is?	B. 12 C. 11 D. 7
140	Question Image	D. None of these
141	If $K_1 : K_2 = 1 : 1$ then the point P dividing the line is	A. Midpoint B. Extreme left point C. Extreme Right Point D. P lies out side k_1 and k_2
142	The radius of the circle $(x-1)^2 + (y+3)^2 = 64$ is	A. 8 C. 4 D. 64
143	Question Image	
144	Which of the following integrals can be evaluated	
145	Question Image	A. Tan x B. X C. - x
146	Question Image	
147	Question Image	A. 2 B. 1 C. 3 D. 4
148	Question Image	A. Unit matrix B. Diagonal matrix C. Nilpotent matrix D. Zero matrix
149	Question Image	
150	Question Image	B. -3/4 C. 1/16 D. 1/4
151	If n is a positive integer, then 3+6+9+ -----------------+3n =	
152	Question Image	A. 1 B. 0 C. -2 D. 3
153	Question Image	
154	The nth term of of A.P:1,5,9,15,........................ is given by	A. 4n - 3 B. 4n + 1 C. 3n - 4 D. 4n + 3
155	If -1 < x < 0, which of the following statements must be true?	A. $x < x^2 < x^3$ B. $x < x^3 < x^2$ C. $x^2 < x^3 < x$ D. $x^2 < x < x^3$
156	The set of complex numbers forms a group under the binary operation of	A. Addition B. Multiplication C. Division D. Subtraction
157	Question Image	
158	In which quadrant is the solution of the equation sin x - 1 = 0	A. II quadrants B. II and III quadrants C. III and IV quadrants D. I quadrant
159	The range of inequality x + 2 > 4 is	A. (-1, 2) B. (-2, 2) D. None
160	The multiplicative inverse of -1 in the set {1-, 1} is	A. 1 B. -1 C. +1 D. 0
		A. A linear equation

161	Question Image	B. A cubic equation C. A quadratic equation D. An equation for circle
162	Question Image	
163	Question Image	D. None of these
164	Question Image	D. None of these
165	Every prime number is also	A. Rational number B. even number C. Irrational number D. multiple of two numbers
166	0 (Zero) is	A. An irrational number B. A rational number C. A negative integer D. A positive number
167	3/2 is	A. An irrational number B. Whole number C. A positive integer D. A rational number
168	The curves $y = x^2$, $y = x$ intersect at	A. (0,0) , (1, 1) B. (2, 4) D. (0,3), (-1, 1)
169	If A and B are matrices such that AB=BA=I then	A. A and B are multiplicative inverse of each other B. A and B are additive inverses of each other C. . A and B are singular matrices D. A and B are equal
170	A relation in which the equality is true only for some values of the unknown variable is called	A. An identity B. An equation C. A polynomial D. Inverse function
171	Question Image	
172	Question Image	
173	Question Image	A. 2 B. 1 C. 0
174	The circle $(x-2)^2 + (y+3)^2 = 4$ is not concentric with the circle	A. $(x-2)^2 + (y+3)^2 = 9$ B. $(x+2)^2 + (y-3)^2 = 4$ C. $(x-2)^2 + (y+3)^2 = 8$ D. $(x-2)^2 + (y+3)^2 = 5$
175	Ifα andβ be irrational roots of a quadratic equation, then	
176	Question Image	
177	Question Image	
178	Question Image	
179	Question Image	
180	Question Image	
181	Question Image	
182	Question Image	
183	The number ways in which 5 distinct toys can be distributed among 3 children is	A. 3^5 B. 5^3 C. $C_3{}^5$ D. $P_3{}^5$
184	A die is thrown. What is the probability that there is a prime number on the top?	A. 1/2 B. 1/3 C. 1/6 D. 2/3
185	The nth term in G.P 3,-6,12,...................... is	A. $3(-2)^{n-1}$ B. $2(-2)^{n+1}$

		C. $3(-2)^n$
		D. $4(-2)^{n-1}$
186	Question Image	
187	Sin x + Cos x = 1 x =	
188	Question Image	
189	Question Image	
190	Question Image	A. 10 B. 20 C. 40 D. 26
191	The center of a circle of radius 10 is on the origin. Which of the following points lies with in the circle	A. (10, 0) B. (8, 8) C. (8, 4) D. (0, 10)
192	Question Image	
193	How many elements are in the sample space of two rolling dies	A. 6 B. 12 C. 18 D. 36
194	Question Image	
195	If A and B are two events, then P(AUB) = ? (when A and B are disjoint)	A. P(A) - P(B) B. P(A) x P(B) C. P(A)+P(B)
196	Which is in the solution set of 4x - 3y < 2	A. (3, 0) B. (4, 1) C. (1, 3) D. None