Sr No.	Integrated MSC Maths Statistics and CS
1	In the series 357,363,369,……. What will be the 10th term?
Alt1	405
Alt2	411
Alt3	413
Alt4	417

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Moon: Satellite :: Earth : ?
Alt1	Sun
Alt2	Planet
Alt3	Solar System
Alt4	Asteroid

3	Door is related to Bang in the same way as Chain is related to ……..?.....
Alt1	Thunder
Alt2	Clinch
Alt3	Tinkle
Alt4	Clank

4	Select the lettered pair that has the same relationship as the original pair of words: Emollient: Soothe
Alt1	Dynamo: Generate
Alt2	Elevation: Level
Alt3	Hurricane: Track
Alt4	Precipitation: Fall

5	Which of the following is the same as Count, List, Weight?
Alt1	Compare
Alt2	Sequence
Alt3	Number
Alt4	Measure

6	Spot the defective segment from the following:
Alt1	The downtrodden
Alt2	needs
Alt3	to be uplifted
Alt4	on a war footing

7	Choose the meaning of the idiom/phrase from among the options given: A close shave
Alt1	a nice glance
Alt2	a narrow escape
Alt3	an intimate
Alt4	a triviality

8	Lightning ------- in the same place twice.
Alt1	doesn’t hit

Alt2	never strikes
Alt3	never attacks
Alt4	never falls

9	Choose the option closest in meaning to the given word: FLIPPANT
Alt1	serious
Alt2	unsteady
Alt3	irreverent
Alt4	caustic

10	Choose the antonymous option you consider the best: OBSOLETE
Alt1	obscure
Alt2	hackneyed
Alt3	current
Alt4	grasp

11	Akash scored 73 marks in subject A. He scored 56% marks in subject B and X marks in subject C. Maximum marks in each subject were 150. The overall percentage marks obtained by Akash in sall te three subjects were 54%. How many marks did he score in subject C ?
Alt1	84
Alt2	86
Alt3	79
Alt4	73

12	A person starts from his house and travels 6 Km towards the West, he then travelled 4 Km towards his left and then travels 8 Km towards west and 3 Km towards South. Finally he turns right and travels 5 Km. What is the horizontal distance he has travelled from his house ?
Alt1	7 Km
Alt2	15 Km
Alt3	23 Km
Alt4	19 Km

13	If 1st Jan 2012 is a Tuesday then on which day of the week will 1st Jan 2013 fall ?
Alt1	Wednesday
Alt2	Thursday
Alt3	Friday
Alt4	Saturday

14	One morning after sunrise, Reeta and Kavita were talking to each other face to face at University. If Kavita' shadow was exactly to the right of Reeta, which direction was Kavita facing ?
Alt1	North
Alt2	South
Alt3	East
Alt4	West

15	In an exam every candidate took History (or)Geography(or)both. 74.8%took History and 50.2% took Geography. If the Total number of candidates is 1500,how many took History and Geography both?

Alt1	400
Alt2	350
Alt3	750
Alt4	375

16	Which word includes the larger % of Vowels?
Alt1	GOOGLE
Alt2	AMAZON
Alt3	FACE BOOK
Alt4	DOE

17	A= Least prime >24; B=Greatest prime <28; Then
Alt1	A>B
Alt2	A<B
Alt3	A=B
Alt4	None

18	CL X VIII refers
Alt1	861
Alt2	701
Alt3	168
Alt4	107

19	Which of the following is larger than 3/5 ?
Alt1	1/2
Alt2	39/50
Alt3	7/25
Alt4	59/100

20	Mr. Babu travelled 1200 km by air which formed 2/5 of his trip. One third of the whole trip, he travelled by car and the rest of the journey was by train. What was the distance travelled by train?
Alt1	600km
Alt2	700 km
Alt3	800 km
Alt4	900 km

21	Let x and y be two real numbers such that $x > 0$ and $xy = 1$. The minimum value of $x + y$ is
Alt1	1/4
Alt2	1
Alt3	2
Alt4	1/2

22	The degree of the differential equation $y_2^{3/2} - y_1^{1/2} - 4 = 0$
Alt1	6
Alt2	4
Alt3	2
Alt4	3

23	If a-b =1 then $a^3 - b^3 - 3ab$
Alt1	1
Alt2	2
Alt3	-2
Alt4	0

24	. The smallest positive integer n for which $(\frac{1+i}{1-i})^n = 1$ is
Alt1	1
Alt2	4
Alt3	3
Alt4	2

25	The angle between two diagonals of a cube:-
Alt1	$\cos^{-1}\frac{1}{2}$
Alt2	$\cos^{-1}\frac{1}{3}$
Alt3	$\cos^{-1}\frac{1}{\sqrt{2}}$
Alt4	$\cos^{-1}\frac{1}{\sqrt{3}}$

26	If $f(x) = \frac{x^2-1}{x^2+1}$ for every real number x, then the minimum value of f
Alt1	Is equal to -1
Alt2	Does not exist because f is unbounded

Alt3	Is not attained even though f is bounded
Alt4	Is equal to 1

27	If G is a group in which a * a = e then:-
Alt1	G is cyclic
Alt2	G is abelian
Alt3	G is infinite group
Alt4	G is trivial group

28	Evaluate $\int_0^{\pi} \cos^{2n+1} x dx$
Alt1	0
Alt2	2π + 1
Alt3	$\frac{\pi}{2n+1}^{2n+1}$
Alt4	$\frac{\pi}{2}^{2n+1}$

29	A set of cardinality n contains how many subsets?
Alt1	n
Alt2	nn
Alt3	2n
Alt4	n2

30	The projection of a vector (i- 2j + k) on the vector (4i- 4j + 7k) is:-
Alt1	$\frac{\sqrt{6}}{19}$
Alt2	$\frac{19}{9}$
Alt3	$\frac{5\sqrt{3}}{10}$

Alt4	$\frac{9}{19}$

31	188 PU_2016_384_E If A and B are finite sets then (i) $n(A \cup B) \geq n(A) + n(A \cap B)$ (ii) $n(A \cap B) \leq n(A) + n(B)$ then which one of the following is correct.
Alt1	i is true but ii is not true.
Alt2	ii is true but i is not true.
Alt3	Both i and ii are true.
Alt4	Neither i nor ii is true.

32	A Candidate was asked to find 7/8th of a positive number and got an answer which was 770 less than the correct answer. What is the original number?
Alt1	1260
Alt2	6260
Alt3	6160
Alt4	1584

33	The points (-5, 12), (-2, -3), (9, -10) and (6, 5) taken in order form a:-
Alt1	straight line
Alt2	square
Alt3	trapezium
Alt4	parallelogram

34	Four fair coins are tossed simultaneously. The probability that atleast one head and one tail turn up is:-
Alt1	7/8
Alt2	1/16
Alt3	15/16
Alt4	1/8

35	If $f(x) = \begin{cases} e^{\cos x} \sin x & for \ \ |x| \leq 2 \\ 2 & otherwise \end{cases}$ then $\int_{-2}^{3} f(x)dx$ is equal to
Alt1	3
Alt2	2
Alt3	1

Alt4	0

36	Intersection of two finite sets A and B is equal to A. (i) Then A = B (ii) Then the number of elements in A is less than the number of elements of B. then which one of the following is correct.
Alt1	Both i and ii are true.
Alt2	i is true but ii is not true
Alt3	ii is true but i is not true.
Alt4	Neither i nor ii is true

37	If 2x + 3y = 6, 8x - 9y + 4 = 0 and ax + 6y = 13 are concurrent, then a is:-
Alt1	3
Alt2	5
Alt3	2
Alt4	4

38	For a function f to have inverse, f is:-
Alt1	one - one
Alt2	onto
Alt3	both one - one and onto
Alt4	identity

39	The exponent of 7 in C(100,50) (where C(n,r) denotes the number of combinations of n distinct objects taken r ($0 \le r \le n$) at a time) is:-
Alt1	6
Alt2	4
Alt3	2
Alt4	0

40	$\int_{\frac{\pi}{4}}^{\frac{3\pi}{4}} \frac{dx}{1+\cos x}$ is equal to
Alt1	-2
Alt2	1/2
Alt3	2
Alt4	-1/2

41	The angle between the curves $\frac{x^2}{25}+\frac{y^2}{9}=1$ and $\frac{x^2}{8}-\frac{y^2}{8}=1$ is A $\frac{\pi}{4}$ B $\frac{\pi}{2}$ C $\frac{\pi}{3}$ D $\frac{\pi}{6}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

42	The difference between the greatest and the least value of the function $F(x)=\int_0^x (t+1)dt$ on [2,3] is
Alt1	7/2
Alt2	2
Alt3	3/2
Alt4	3

43	Which of the following function is increasing in (0,∞)
Alt1	x2
Alt2	1/x
Alt3	ex
Alt4	x-2

44	How many 5 digit numbers can be formed using 1,2,3,4 and 5 such that units digit is always greater than the hundreds digit.
Alt1	60
Alt2	48
Alt3	36

Alt4	72

45	Lt S = {1,2, {2,3}, {2,3,4} } (i) 4 is an element of S (ii) {2,3} is a subset of S then
Alt1	i is true but ii is not true.
Alt2	Both i and ii are true
Alt3	ii is true but i is not true.
Alt4	Neither i nor ii is true.

46	The solution of the equation $\frac{d^3y}{dx^3} - 3\frac{d^2y}{dx^2} + 3\frac{dy}{dx} - y = 0$ is $y = ?$ A $e^{2x}\left(c_1x^2 + c_2x + c_3\right)$ B $e^{x}\left(c_1x^2 + x(c_2 + c_3)\right)$ C $e^{x}\left(c_1x^2 + c_2x + c_3\right)$ D $e^{x}\left(c_1x^2 + c_2\right)$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

47	If $0 < r < s \leq n$ and P(n,r) = P(n, s) (where P(n,r) denotes the number of permutations of n objects taken r at a time), then value of r+s is:-
Alt1	2
Alt2	2n-2
Alt3	2n-1
Alt4	1

48	If g(x) = 3x + x + 5, evaluate g(2).

Alt1	g(2) = 9
Alt2	g(2) = 17
Alt3	g(2) = 13
Alt4	g(2) = 8

49	$f(x)=\frac{\sin 3x}{x}$ for $x \neq 0$ and $f(0)=k$. If f(x) is continuous at $x = 0$, then k is
Alt1	3
Alt2	2
Alt3	1
Alt4	4

50	The value of $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} sin^4\, x dx$ is A $\frac{3}{16}$ B $\frac{3\pi}{8}$ C 0 (Zero) D $\frac{3\pi}{16}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

51	. Let $f(x) = \int_1^x \sqrt{2-t^2}\ dt$. Then the real roots of the equation $x^2 - f'(x) = 0$ are A $\pm\frac{1}{\sqrt{2}}$ B 0 and 1 C $\pm\frac{1}{2}$ D ± 1
Alt1	A
Alt2	B
Alt3	C
Alt4	D

52	$\lim_{x \to \pi/2} \frac{\cos x}{\pi/2 - x} =$
Alt1	0
Alt2	-1
Alt3	∞
Alt4	1

53	A and B can do a piece of work in 72 days; B & C can do the same work in 120 days; A and C can do it in 90 days. In what time can A alone do it?
Alt1	150 days
Alt2	90 days
Alt3	120 days
Alt4	100 days

54	What is the midpoint of the line joining the points (1,2,3) and (3,6,3)?
Alt1	(1,4,5)
Alt2	(1,2,5)
Alt3	(2,4,3)
Alt4	(2,5,3)

55	The number of solutions of the equation $\frac{1}{x+1}+\frac{1}{x+5}=\frac{1}{x+2}+\frac{1}{x+4}$ is
Alt1	1
Alt2	0
Alt3	3
Alt4	2

56	The Jacobian of u and v with respect to x and y is given by:-
	A $\begin{vmatrix} \partial u/\partial x & \partial v/\partial y \\ \partial u/\partial x & \partial v/\partial y \end{vmatrix} = \frac{\partial(u,v)}{\partial(x,y)}$
	B $\begin{vmatrix} u & v \\ x & y \end{vmatrix} = \frac{\partial(u,v)}{\partial(x,y)}$
	C $\begin{vmatrix} \partial v/\partial y & \partial u/\partial x \\ \partial u/\partial y & \partial v/\partial x \end{vmatrix} = \frac{\partial(u,v)}{\partial(x,y)}$
	D $\begin{vmatrix} \partial u/\partial x & \partial v/\partial x \\ \partial u/\partial y & \partial v/\partial y \end{vmatrix} = \frac{\partial(u,v)}{\partial(x,y)}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

57	If A and B are subsets of a set S then the intersection of A and the complement of B U A is:-
Alt1	empty set
Alt2	A
Alt3	A ∩ B
Alt4	B

58	In the multiplicative group of nth roots of unity, the inverse of ωk is (k < n).

	A $\omega^{1/k}$ B ω^{-1} C ω^{n-k} D $\omega^{n/k}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

59	The equation of a sphere whose centre is (a, b, c)and radius r is:-
	A $(x-a)^2+(y-b)^2+(z-c)^2=r^2$ B $a^2+b^2+c^2=r^2$ C $x^2+y^2+z^2=0$ D $x^2+y^2+z^2=r^2$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

60	The value of $\int_0^1 x(1-x)^4 dx$ is
Alt1	1/20
Alt2	1/30
Alt3	1/24
Alt4	1/12

61	If f(x)=[x]+[-x], where [x] denotes the greatest integer not greater than x, then for any integer m:-
Alt1	$\lim_{x \to m} f(x)$ exists and is not equal to $f(m)$
Alt2	f is differentable at x = m
Alt3	$\lim_{x \to m} f(x)$ exists and is equal to $f(m)$
Alt4	f is continuous at x = m

62	Which of the following is not a group?
	A $(Z, +)$ B $(Z_n, +_n)$ C $(R, +)$ D $(Z, .)$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

63	If S={[1],[3],[4],[5],[9]} is an abelian group under multiplication modulo 11, then the inverse of [5] is:-
Alt1	[9]
Alt2	[3]
Alt3	[5]
Alt4	[4]

64	If i, i + j and i + j + k are the sides of a parallelopiped, then its volume is:-
Alt1	4
Alt2	3
Alt3	2
Alt4	1

65	The value of $x = \sqrt{6+\sqrt{6+\sqrt{6+....upto\infty}}}$ is
Alt1	∞
Alt2	2
Alt3	3
Alt4	1

66	If $\frac{4+3\sqrt{3}}{\sqrt{7+4\sqrt{3}}} = a + \sqrt{b}$, then (a, b) is
Alt1	(1, 12)
Alt2	(-1, 12)
Alt3	(-12, 1)
Alt4	(2, 3)

67	40 men can complete one work in 20 days. In how many days 50 men can complete it?
Alt1	12
Alt2	16
Alt3	15
Alt4	18

68	If $p, q \in R$ and $2 + i\sqrt{3}$ is a root of $x^2 + px + q = 0$ then A $p = -4, q = 7$ B $p = -2, q = \sqrt{3}$ C $p = 3, q = 2$ D $p = -4, q = 2$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

69	Find the sum $\sum_{k=1}^{100} 3 + k$
Alt1	3550
Alt2	3530
Alt3	5350
Alt4	5330

70	The range of function $f: R \to R$ given by $f(x) = x^2$ is .
Alt1	R
Alt2	R+
Alt3	R*
Alt4	R+U{0}

71	In the group $(C - \{0\}, .)$ order of i is
Alt1	2
Alt2	3
Alt3	4
Alt4	1

72	A Book rack contains three types of books among which 3 are hard bind, 5 soft bind and 7 spiral bind. If a book is selected at random, then the probability that the book is not a spiral bind:-
Alt1	7/15
Alt2	8/15
Alt3	7/8
Alt4	1/7

73	Which of the following is correct?
Alt1	An element of a group can more than one inverse
Alt2	If every element of a group is its own inverse, then the group is abelian
Alt3	The set of all 2 x 2 real matrix forms a group under matrix multiplication
Alt4	$(a * b)^{-1} = a^{-1} * b^{-1}$ for all a, b in G

74	If A is a any 3×3 matrix with $\det(A) \neq 0$, then $rank(AA^{-1})$ is
Alt1	1
Alt2	0
Alt3	3
Alt4	2

75	Choose the matrix for which the inverse does not exist.
	A $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ B $\begin{pmatrix} \frac{\sqrt{3}}{2} & \frac{\sqrt{3}}{2} \\ \frac{1}{2} & \frac{1}{2} \end{pmatrix}$ C $\begin{pmatrix} \frac{1}{\sqrt{2}} & \frac{\sqrt{3}}{2} \\ \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \end{pmatrix}$ D $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$
Alt1	A
Alt2	B
Alt3	C

Alt4	D

76	The number of relations on a set with n elements is:-
Alt1	2n
Alt2	n2
Alt3	2^{n^2}
Alt4	2n

77	Any binary operation defined on a singleton set:-
Alt1	form a commutative group
Alt2	is neither commutative nor associative.
Alt3	is associative but not commutative
Alt4	is commutative but not associative

78	The order of -1 in (Z,+) is:-
Alt1	2
Alt2	1
Alt3	0
Alt4	infinite

79	Conjugate of $\begin{pmatrix} 1+i & 2 \\ 2+i & i \end{pmatrix}$ A $\begin{pmatrix} 1-i & -2 \\ 2+i & -i \end{pmatrix}$ B $\begin{pmatrix} 1+i & 2 \\ 2+i & i \end{pmatrix}$ C $\begin{pmatrix} i-1 & -2 \\ i-2 & -i \end{pmatrix}$ D $\begin{pmatrix} 1-i & 2 \\ 2-i & -i \end{pmatrix}$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

80	If P(A) = 0.3, P(B) = 0.4 and P(A ∩ B) = 0 then P(A ∪ Bc) is equal to:-
Alt1	0.7
Alt2	0.8
Alt3	0.9
Alt4	0.6

81	If A is a square matrix of order n then $\lvert adj\ A\rvert$ is A $\lvert A\rvert$ B $\lvert A\rvert^n$ C $\lvert A\rvert^{n-1}$ D $\lvert A\rvert^2$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

82	If the matrix $\begin{pmatrix} -1 & 3 & 2 \\ 1 & n & -3 \\ 1 & 4 & 5 \end{pmatrix}$ has an inverse then the value of n A $n \neq 4$ B n is any real number C $n = -4$ D $n \neq -4$

Alt1	A
Alt2	B
Alt3	C
Alt4	D

83	The rank of the matrix $\begin{pmatrix} 1 & -2 & 3 \\ -2 & 4 & -6 \\ 5 & 1 & -1 \end{pmatrix}$ is
Alt1	1
Alt2	0
Alt3	2
Alt4	3

84	Given P(A) = 0.30, P(B) = 0.78 and P(A ∩ B) = 0.16. The value of P (A ∩ Bc) is:-
Alt1	0.14
Alt2	0.24
Alt3	0.54
Alt4	0.34

85	If 52 playing cards are randomly distributed among 4 people so that each gets 13 cards, then the probability that somebody will have 4 kings is:-
Alt1	46C9 / 52C13
Alt2	46C8 / 52C13
Alt3	13C4 / 52C13
Alt4	48C9 / 52C13

86	If a random variable X has mean 3 and standard deviation 5, then the variance of a variable Y = 2X 5 is:-
Alt1	100
Alt2	15
Alt3	40
Alt4	45

87	If a + b = 3 (c + d), which one of the following is the average of a, b, c and d?
Alt1	c + d
Alt2	3(c+d)/8
Alt3	3(c+d) /4
Alt4	c + d/4

88	The formula for calculating coefficient of variation (C.V.) is:-
Alt1	C.V = (Mean/Standard deviation) x 100
Alt2	C.V. = (100 / Mean x Standard deviation)
Alt3	C.V. = (Standard deviation / Mean) x 100
Alt4	C.V. = (Mean x Standard deviation) / 100

89	A discrete random variable X takes the values 1,2,3 and 4 such that 3P(X=1) = 2P(X=2) = 5P(X=3) = P(x = 4) Then P(x = 3) is equal to:-

Alt1	6/61
Alt2	3/61
Alt3	2/61
Alt4	1/6

90	Let $P(x) = \begin{cases} x/5 ; x = 1,2,3,4,5 \\ 0 \quad otherwise \end{cases}$ Then P(X = 1 or 2) is equal to
Alt1	1/5
Alt2	1/4
Alt3	1/3
Alt4	1/2

91	The empirical relationship between arithmetic mean, median and mode is:-
Alt1	Mode = 3 Median - 2 Mean
Alt2	Median = Mean - Median
Alt3	Mean = Median - Mode
Alt4	Mode = 2 Median - Mean

92	A distribution consists of three groups having 40, 50 and 60 items with means 20, 26 and 15 respectively. The mean of the distribution is:-
Alt1	25
Alt2	18
Alt3	22
Alt4	20

93	The median of the values 48, 35, 36, 40, 42, 54, 58, 60 is:-
Alt1	45
Alt2	40
Alt3	44
Alt4	41

94	A lot of 10 items contains 3 defective items. A sample (without replacement) of 4 items is drawn at random. Let X denote the number of defective items in the sample. The P (X ≤ 1) is:-
Alt1	1/2
Alt2	3/10
Alt3	1/3
Alt4	2/3

95	Mean and Variance are equal for the following probability distribution:-
Alt1	Poisson
Alt2	Binomial
Alt3	Normal
Alt4	Uniform

96	What is the shape of the frequency curve of Poisson distribution:-

Alt1	Positively Skewed
Alt2	Negatively Skewed
Alt3	symmetric
Alt4	Bath tub

97	A continuous random variable has the following p.d.f.F(x) = 3x2 ; 0 ≤ x ≤ 1If P(X≤a) = P(X > a), then the value of a3 is:-
Alt1	1/16
Alt2	1/4
Alt3	1/2
Alt4	1/8

98	The variance of first n natural numbers is:-
	A $(n^2+1)/12$ B $(n^2-1)/12$ C $(2n^2-1)/12$ D $(n+1)^2/12$
Alt1	A
Alt2	B
Alt3	C
Alt4	D

99	If X is a Poisson variate with parameter λ such that P(X=2) = 9 P(X=4) + 90P(X=6) then the variance of X is:-
Alt1	1
Alt2	4
Alt3	2
Alt4	3

100	Which one of them is not the characteristic property of Normal distribution with mean μ and variance σ2? (i) Continuous distribution; (ii) Symmetric distribution about σ2; (iii) Mean, Median and Mode are equal; (iv) Skewness is zero
Alt1	i and ii
Alt2	ii

Alt3	i
Alt4	iv