



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

FUNDAMENTALS OF BUSINESS MATHEMATICS AND STATISTICS (PAPER - 3)

MCQ BANK

SL NO	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
1	Two numbers are in the ratio 7: 9, if the sum of the numbers is 288, then the smaller number is :	126	288	162	144
2	When the number 1580 is increased in the ratio 5: 9, the new number is :	788	2488	878	2844
3	The ratio of the number of faces to the number of edges of a box is :	3:8	8:3	1:2	2:1
4	Find the fourth proportional to 6, 8, 9 is:	18	12	7	13
5	Find the compounded ratio of: 15: 8 and 18: 5	27:4	4:27	27:8	8:27
6	Find the third proportional to $6\frac{1}{4}$ and 5	$9\frac{1}{2}$	$3\frac{1}{5}$	4	8
7	Find the Duplicate ratio of $8a : \sqrt{4b}$	$64a^2 : 2b^2$	$16a^2 : b^2$	$32a^2 : 4b^2$	$32a^2 : 8b^2$
8	A class consists of 48 male students and 23 female students. Find the ratio of female students to total strength of the class :	23:48	48:23	48:71	23:71
9	If 4, 6, p, 27, q are in continued proportion, find the values of p and q.	p = 9, q = 9	p = 9, q = 81	p = 81, q = 9	p = 81, q = 81
10	If a Stadium having spectators divided into groups of Young Generation and Old Generation and the number of young spectators are 1525 and old spectators are 1875. Find the ratio of Total Spectators to Young Spectators.	136:75	136:85	75:61	136:61
11	Find two numbers whose mean proportional is 8 and the 1st number is square of the 2nd number.	8,8	4,2	16,4	64,8
12	AB LLP is expecting to receive a certain sum of money five years from now. If the present value of this sum is ₹38,400 at current market interest rate of 6% when the interest is compounded monthly, then how much amount they will receive after 5 years?	₹52,684	₹52,884	₹51,904	₹51,794
13	What sum will amount to ₹5480 in 6 years at 10% p.a. compound interest payable half-yearly?	₹ 3,051	₹ 2,051	₹ 3,501	₹ 2,501
14	Mr. Singh deposits ₹2,000 at the beginning of each year for 5 years. How much do these accumulate at	₹ 10,272	₹ 11,591	₹ 10,727	₹ 11,950



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	the end of 5th year at an interest rate of 6%?				
15	A buys a shop for ₹48,750 down payment and ₹60,000 after one year. If the money is worth 10% per year compounded half-yearly. Find the purchase price of the shop.	₹ 94,280	₹ 1,03,170	₹ 45,530	₹ 54,420
16	A loan of ₹20,000 has been issued for 5 years. Compute the amount to be repaid to the lender if simple interest is charged @ 8% per year.	₹ 28,000	₹ 25,000	₹ 27,000	₹ 24,000
17	Accumulated series of deposits as future sum money is classified as	Annuity Fund	Sinking Fund	Marginal Fund	Nominal Fund
18	A Laptop depreciated in value each year at 15% of its previous value and at the end of fourth year, the value was ₹36,331. Find its original value.	₹ 69,600	₹ 69,200	₹ 69,300	₹ 69,500
19	What would be the value of the 9th term?	66	68	59	61
20	What would be the sum of the first 11 terms of the series?	419	440	420	426
21	Which term of the series would be 82?	12	11	10	14
22	Find the next 6 terms for the series: 128, 139, 150, 161, 172, 183.	194, 205, 216, 228, 240, 252	194, 205, 217, 229, 242, 256	194, 205, 218, 231, 245, 259	194, 205, 216, 227, 238, 249
23	For the given series: 66, 71, 76, 81, 86, 91, 96 ...666, 671, 676. With 'n' terms in the series, what will be the value of 'd' ?	-5	15	-3	5
24	The First term is 748, Last Term is 28, and the value between two consecutive terms is 9 deducted, find the number of terms in the series.	9	8	10	None of these
25	Identify the type of series: 1+2+3+4+5 :	H.P.	G.P.	Either of 'a' or 'b'	A.P
26	When a Bike had travelled for 78 km in 3 hours 45 minutes in the evening, how much distance would the Bike travelled in 2 hours?	41.60 km	48.88 km	52 km	55 km
27	A cycle travels a distance of 300 m in every second. What is the distance covered in an hour by the cycle?	3000 km	1080 km	1800 km	2160 km
28	y is the yardstick to measure the performance of two vehicles, where $y = \text{Speed} \times \text{Time} \times \text{Distance}$. If Time taken by one of the vehicle (1st Vehicle) is increased by 10%, what would be the impact on the yardstick?	No change	1st vehicle would be better than 2nd Vehicle	2nd Vehicle would be better than 1st Vehicle	None of the Above
29	If Toto covered 240 km at a speed of 40kmph while Scooty covered 180 km at a speed of 60 kmph, which one of them took less time to cover the distance and what was the time taken?	Scooty, 3 hrs	Toto, 6 hrs	Toto, 3 hrs.	Scooty, 6 hrs.
30	If A takes 3 hours to cover a distance of 60 km, B takes 2 hours to cover a	6 hours	12 hours	15 hours	3 hours



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	distance of 50 km, how much time would A take more than B to cover 300 km?				
31	What will be the value of $(9^3)^2$?	59004×9	59049×9	49005×9	49059×9
32	What will be the value of $3^6 \times 3^4 \times 3^{-2} \times 3^{-3} \times 3^6$?	3^{21}	3^{16}	3^{19}	3^{11}
33	Evaluate $\frac{2^{1/3} \times 8^{2/3} \times 6^{-5/4} \times 3^{-3/4} \times 9}{\sqrt[3]{16}}$	$\frac{1}{\sqrt[4]{2}}$	2	$\sqrt[4]{2}$	None of the above
34	Find the value of the logarithm of 2nd number (b) for 3 consecutive numbers (a, b, c).	$\log(1+ac)$	$\frac{1}{2} \times 2 \times \log(1+ac)$	$\frac{1}{2} \times \log(1+ac)$	$2 \times \log(1+ac)$
35	If $\log(7y-5) = 2$, find the value of y.	15	10	8	7
36	Compute $\frac{12!}{(8! \times 4!)}$	3960	495	99	440
37	Find the number of permutations for 15 scooters if 3 scooters are to be considered at a time.	2730	2370	2184	2814
38	Find the value of a, if $(a-2)! \times 24 = (a+1)!$	0	2	4	3
39	Find the square of the difference of the roots of $115 + 5(x^2 - 12x) = 0$	24	48	26	52
40	When α and β are the roots of $5x^2 - 7x + 9 = 0$ then find the values of $\alpha + \beta + 4$	$27/5$	$29/5$	$28/5$	$24/5$
41	In Venn diagram, Universal Set is represented by _____.	Stars	Squares	Rectangle	Circles
42	According to De Morgan's Law: $(B \cap C)' =$ _____.	$B' \cup C'$	$B' \cap C'$	$B \cup C'$	$B' \cap C$
43	What would be the factorial notation for: $11 \times 10 \times 9 \times 8 \times 7$	$11! / 6!$	$11! / 5!$	$10! / 6!$	$10! / 5!$
44	How many ways can 8 people get vaccinated from 8 vaccinators, assuming no vaccinator is idle?	40320 ways.	5040 ways.	5760 ways.	35280 ways.
45	In how many different ways can 4 different cars, one of each of the 4 manufacturers, be parked in a parking lane?	20 ways	22 ways	24 ways	26 ways
46	For what values of a and b, the product of roots would be equal to c?	$a = c \neq b$	$a \neq b = c$	$a = 1$	$a \leq 0$
47	When are nature of roots real rather than imaginary?	If Discriminant is negative	If Discriminant is less than zero	If Discriminant is not a perfect square	If Discriminant is more than or equal to zero
48	For any sum of roots of quadratic equation, 'b' represents -	Coefficient of x	Constant term	Coefficient of x^2	All of the above



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49	For any sum of roots of quadratic equation, 'a' represents -	Coefficient of x	Coefficient of x^2	Constant term	None of the above
50	If $b^2 - 4ac > 0$, is a perfect square, the nature of roots would be	Real and Equal	Imaginary	Unreal	Real and Unequal
51	$\lim_{x \rightarrow 3}(x^3 + 1)$	52	53	55	54
52	$\lim_{x \rightarrow 0}(4x^2 + 7x + 5)$	4	7	5	16
53	$\lim_{x \rightarrow 0} \left(\frac{x^2 - 16}{x - 4} \right)$	2	4	8	6
54	If $y = xe^x$ then $\frac{dy}{dx} = ?$	xe^x	$e^x (x + 1)$	$e^x (x - 1)$	e^x/x
55	$f(x) = x^5/5 + x^4/4 + x^3/2 - 7x^2 + 18x$. $f'(x) = ?$	$x^4/4 + x^3/3 + 3x^2/2 + 14x$	$x^6/6 + x^5/5 + x^4/4 - 7x^3 + 18x$	$x^4 - x^3 - 3x^2/2 + 14x$	$x^4 + x^2 + 3x^2/2 - 14x$
56	When $y = 4x$ then derivative of y is —	$x(4^{x-1})$	$\frac{4^x}{2\log 2}$	$4^x \log 2$	None of these
57	Find the differential coefficient of $y = e^x/e^{x+1}$	$e^x/(e^x+1)^2$	$e^{2x}/(e^x+1)^2$	$e^x/(e^{2x}+1)^2$	$e^x/(e^x+2)^2$
58	$y = (4x - 3)^3 + (5x - 2)^2$. Calculate y_1	$182x^2 + 13x + 29$	$96x^2 + 13x + 29$	$12x^2 + 26x + 29$	$192x^2 + 26x + 58$
59	$\frac{x^2}{16} + \frac{y^2}{4} = 1$ is an implicit function. The derivative of this function is :	$\frac{x}{4y}$	$-\frac{x}{4y}$	$\frac{x}{2y}$	$-\frac{x}{2y}$
60	The result of differentiation of $y = \log [3x^2 + 13x + 10]$ is --	$\frac{6x^2 + 13x}{3x^2 + 13x + 10}$	$\frac{6x + 13}{3x^3 + 13x^2 + 10x}$	$\frac{6x + 13}{3x^2 + 13x + 10}$	$\frac{19}{6x + 13}$
61	A soft-drink manufacturer has a revenue function $R = 7Q^2 - 19Q + 30$ and the cost function is given by $9Q$. Find the number of cans produced by the firm, under perfect competition.	2	4	6	8
62	A tin manufacturer has a revenue function given by: $R = 11Q^2 - 110Q + 70$ and the cost function is given by: $C = 22Q$. Find the number of tins to be produced by the manufacturer.	2	6	10	14
63	A demand function is given by: $P = a - bQ$ and the cost function is given by $C = Q^2$. Find the value of Q for which profit will be maximum under perfect competition.	$\frac{a}{(a + 1)}$	$\frac{a}{2(b + 1)^2}$	$\frac{a}{2(b + 1)}$	$\frac{b}{2(a + 1)}$
64	The demand function is given by: $P = 1400 - 25Q$ and the cost function is given by $C = 10Q^2$. Find the value of Q at the equilibrium point.	10	20	30	40
65	A revenue function is given by $R = 3Q^2 - 8Q + 15$ and the cost function is given by: $C = 28Q$. Find the value of	3	9	6	12



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	Q for achieving highest profit.				
66	A demand function is given by: $P = 1500 - 3Q$ and the cost function is given by: $C = 12Q^2$. Find the value of Q at the equilibrium point.	50	100	150	125
67	A firm has a fixed production cost of ₹ 90 and a marginal variable production cost of ₹ 9. The price of the product is ₹18. Find the cost function, revenue function, and the value of Q at the Break Even point.	$2Q + 20$; $9Q$; 10	$9Q + 90$; $18Q$; 10	$4Q + 90$; $36Q$; 20	$Q + 10$; $5Q$; 50
68	A sugar industry has a fixed cost of ₹290 and a marginal cost of 50 paise. He sells sugar at the price of ₹15/kg. Find the quantity of sugar sold for breaking even.	10	30	20	40
69	A cotton mill has a fixed cost of ₹1540 and a marginal cost of ₹33. He sells a shirt at a price of ₹110. Find the minimum number of shirts sold so the mill incurs no loss.	23	20	26	29
70	Given: $C(x) = 900 + 30x + 0.6x^2$, $P = 90$. Find the value of x at equilibrium point.	40	50	70	30
71	Given: $C(x) = 2x^2 - 3x - 12$, $P = 33$. Find the value of x at equilibrium point.	9	12	15	18
72	Given: $R(x) = 3x^2 + 24x + 2$, $MC(x) = 42$ and the fixed cost is 90. Find the value of x at equilibrium point.	2	3	7	11
73	Given: $R(x) = 6x^2 - 11x - 35$, $C(x) = 5x^2 - 3x + 16$. Find the value of x for which profit is maximum.	2	4	6	12
74	Given: $R(x) = 20x^2 - 15x - 10$, $C(x) = x^2 + 99x + 27$. Find the value of x for which profit is maximum	3	15	25	10
75	Given: $R(x) = 3x^2 + 4x + 2$, $MC(x) = 16$ and the fixed cost is 24. Find the profit maximising value of x under perfect competition.	1	3	4	2
76	A manufacturer has a monthly fixed cost of ₹1, 00,000 and a production cost of ₹50 per unit produced. The product is sold at ₹75. Find the cost function and the number of products be sold by the manufacturer to have break even.	$25x + 50,000$; 2000	$50x + 1,00,000$; 4000	$5x + 1,00,000$; 3000	$2.5x + 10,000$; 5000
77	A cement industry has a yearly fixed cost of ₹96,000 and a monthly production cost of ₹13 per unit produced. The product is sold at ₹39 per unit. Find the cost function	$13x + 8000$	$13x + 96,000$	$39x + 96,000$	$39x + 8000$
78	Find the monthly profit function if a firm's yearly fixed cost is ₹60,000 and yearly production cost is ₹120 per piece. Each unit is sold at ₹15.	$\pi = 5x - 5000$	$\pi(x) = 15x - 5000$	$\pi(x) = 20x - 5000$	$\pi(x) = 25x - 5000$



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79	Given: $C(x) = 9x + 350$ and $P = 14$. Find the condition of getting break-even point	$5x - 350 = 0$	$7x - 350 = 0$	$-14x - 350 = 0$	None of these
80	Given: $C(x) = 9x + 350$ and $P = 14$. find the break-even quantity	50	70	110	100
81	$f(x) = 6x^2 + 11x - 35$	Maximum	Minimum	No Curvature	None of the above
82	$f(x) = -4x^2 - 7x - 35$	Maximum	Minimum	No Curvature	None of the above
83	$f(x) = 20x^2 - 15x - 10$	Maximum	Minimum	No Curvature	None of the above
84	$f(x) = 3x^2 - 4x + 2$	Maximum	Minimum	No Curvature	None of the above
85	$f(x) = -x + 6x + 18$	Maximum	Minimum	No Curvature	None of the above
86	$f(x) = 9x^2 - 6x + 1$	Maximum	Minimum	No Curvature	None of the above
87	$f(x) = -x^2 + 4x - 2$	Maximum	Minimum	No Curvature	None of the above
88	$f(x) = 3x^2 + 2$	Maximum	Minimum	No Curvature	None of the above
89	$f(x) = x^2 - 3x$	Maximum	Minimum	No Curvature	None of the above
90	$f(x) = ax^3 + bx^2 + cx + d$; $a < 0$; $b < 0$; $c > 0$ and $a < b$	Maximum	Minimum	Minimum	Maximum
91	$f(x) = x^3/3 - 9x^2 + 81x + 70$	Maximum, $x = 9$; Minimum, $x = 9$	Minimum, $x = 3$; Maximum, $x = 5$	No curvature	None of the above
92	$f(x) = (2/3)x^3 + (9/2)x^2 - 11x - 21$	Maximum, $x = 2$; Minimum, $x = -9/2$	Maximum, $x = -11/2$; Minimum, $x = 1$	Maximum, $x = -3/2$; Minimum, $x = -3$	No curvature
93	$f(x) = (4/3)x^3 - 5x^2 + 4x - 9$	Maximum, $x = 4$; Minimum, $x = -3/2$	Maximum, $x = 1/2$; Minimum, $x = 2$	Maximum, $x = 2$; Minimum, $x = -1$	No curvature
94	$f(x) = x^3 - 2x^2 - 4x$	Maximum, $x = -2/3$; Minimum, $x = 2$	Maximum, $x = 3/4$; Minimum, $x = 1$	Maximum, $x = 3$; Minimum, $x = -1/3$	No curvature
95	$f(x) = x^3/3 - 4.5x^2 - 8x + 2$	Maximum, $x = 1$; Minimum, $x = 8$	Maximum, $x = 4$; Minimum, $x = 2$	Maximum, $x = 3$; Minimum, $x = -5$	No curvature
96	$f(x) = x^3/3 - 3/2x^2 + 2x - 3$	Maximum, $x = 3$; Minimum, $x = 5$	Maximum, $x = 1$; Minimum, $x = 2$	Maximum, $x = 6$; Minimum, $x = 1$	No curvature
97	$f(x) = 2/3x^3 - 3/2x^2 - 5x$	Maximum, $x = -1$; Minimum, $x = 5/2$	Maximum, $x = 1$; Minimum, $x = 3$	Maximum, $x = -1$; Minimum, $x = -3/2$	No curvature
98	$f(x) = -x^3/3 + 4x^2 - 15x$	Maximum, $x = 1$; Minimum, $x = 3$	Maximum, $x = 5$; Minimum, $x = 3$	Maximum, $x = -3$; Minimum, $x = -5$	No curvature
99	$f(x) = x^3/3 - x^2/2 - 2x$	Maximum, $x = -1$; Minimum, $x = 2$	Maximum, $x = 1$; Minimum, $x = -2$	Maximum, $x = -3$; Minimum, $x = 5$	No curvature
100	$f(x) = x^2/3 + 2x^2 + 3x + 7$	Maximum, $x = -3$; Minimum, $x = -1$	Maximum, $x = 1/2$; Minimum, $x = 2$	Maximum, $x = 1$; Minimum, $x = 4$	No curvature
101	The word 'Statistics' has been derived from the Latin word 'Status' which means :	A numerical state	A mathematical state	A neutral state	A political state
102	Which one of the following has synonymous words?	Status, Staistik, Statista	Staistik, Statista, Stats	Statistic, Statistia, Stats	Statistic, Statistia, Status
103	Statistics is a tool in the hands of mankind :	To translate complex facts into simple and understandable statements of facts	To translate statistical information into mathematical statements of facts	To translate business information into simple and understandable statements of facts	To translate complex facts into presentable forms through tables and diagrams
104	The word statistics in plural form means :	The science of statistics that collect data in a systematic manner with some definite aim or object towards further analysis in graphical way	The numerical data collected in a systematic manner with some definite aim or object in view such as the number of persons unemployed in a country.	The numerical data collected in a systematic manner for analysing the state of affairs with the help of mathematical applications	The science of statistics that deals with the principles, devices or statistical methods of collecting, analyzing and interpreting numerical data
105	The word statistics in singular form means :	The science of statistics that collect	The numerical data collected in a systematic	The numerical data collected in a	The science of statistics that deals



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		data in a systematic manner with some definite aim or object towards further analysis in graphical way	manner with some definite aim or object in view such as the number of persons unemployed in a country.	systematic manner for analysing the state of affairs with the help of mathematical applications	with the principles, devices or statistical methods of collecting, analyzing and interpreting numerical data
106	Which one of the following is not a characteristic of Plural form of Statistics?	Statistics should be collected for a pre-determined purpose	Statistics should be enumerated or estimated	Statistics are always graphically expressed	Statistics are affected by a large number of causes
107	Statistics in singular sense has :	5 stages	6 stages	2 stages	4 stages
108	Measurement of skewness is :	Analysis of data	Presentation of data	Organisation of data	Interpretation of data
109	Find the odd man out from the following :	Regression	Kurtosis	Sampling	Central Tendency
110	Raw data is :	Information which can be interpreted to take decision	Information which can't be put to use directly	Information which is not amenable to conversion	Information which are useless
111	There are four person named A, B, C, & D. A is a sales person whereas B, C, D are students. A collected sales figures for his region and B, C, D used these data in order to study sales pattern. Which one of the following is correct?	B uses secondary data	A & B both are using primary data	A, B, C, D all are using secondary data	B, C, D are using primary data
112	Which one of the following is a method of collecting primary data?	Information collected through newspapers and periodicals	Information obtained from the publications of trade associations	Information collected by Government through Census	Information gathered from research paper published in research journal
113	Classification of data is :	The process of arranging things in groups or classes according to their common frequencies	The process of arranging things in groups or classes according to their common characteristics and affinities	The process of arranging things in groups or classes according to their common differences and tally marks	The process of arranging things in groups or classes according to their common deviations from respective mean
114	In Statistics classification :	Separates data into different unrelated parts	Separates data into different dispersed groups	Separates data into different but related parts	Separates data into different modal groups
115	Which one of the following is a characteristic of a good classification?	Classification should be heterogeneous	Classified groups must have overlapping data	Classification should be stable	Classification should be inclusive
116	When the basis of classification is according to differences in time it is called	Temporal Classification	Quantitative Classification	Spatial Classification	Qualitative Classification
117	Dichotomous Classification is :	When data is classified according to presence or absence of two attributes	When data is classified into two groups containing all the attributes	When data is classified according to presence of two attributes	When data is classified into two groups according to presence or absence of one attribute
118	Tabulation Condenses classified data so that:	Data may be more easily understood	Data may be easily presented textually	Data may be more easily synchronized	More comprehensive secondary result could be obtained
119	Tabulation is preferred to textual presentation because :	Tabulation never compares between rows and columns	Tabulation is a must for diagrammatic representation	Tabulation does not require complex statistical analysis	Tabulation always get constructed with simple data
120	With respect to accuracy :	Diagrammatic presentation is preferable to Tabular presentation	Textual presentation is preferable to diagrammatic presentation	Tabular presentation is preferable to Diagrammatic presentation	Textual presentation is preferable to Tabular presentation
121	Which one of the following is a	Geometric Mean;	Harmonic Mean;	Mode;	Progressive Average;



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	Positional Average?				
122	Because of heavy rain on Sunday average rainfall of a city for the week increased to 0.6 inch from the average rainfall 0.3 inch measured from Monday to Saturday. The rainfall on Sunday was-	2.4 inch;	0.3 inch;	2.1 inch;	1.5 inch
123	The mean of the frequency distribution ((x f ₁ , 1), (x ₂ , f ₂), (x ₃ , f ₃).....(x _n , f _n)) is :	$\Sigma x / \Sigma f$	$\Sigma x / n$	$\Sigma fx / n$	$\Sigma fx / \Sigma f$
124	$\Sigma_{x=1}^{20} x = 54120$; While computing this, it was observed that two entries were wrongly entered as 850 and 320 instead of 580 and 230. Correct value of Σx is:	2688;	2746.5;	2720;	2662;
125	$\Sigma(X - \bar{X})$ is always equal to :	1;	-1;	0;	∞ ;
126	The sum of the squares of deviations of a set of observations is the minimum when deviations are taken from the :	Geometric Mean;	Harmonic Mean;	Arithmetic Mean;	Mode;
127	If each of the values of a variable x with mean of $\bar{x}$, is multiplied by K then the new mean of the variable is :	$\bar{x}/k$	$k\bar{x}$	$\bar{x}$	$\bar{kx}$
128	Assumed mean is 35, $\Sigma fd = -425$ & $\Sigma f = 63$. $\bar{x}$ is:	20	25.87	28.25	19.34
129	If $A = 500$, $i = 1000$ & $\Sigma fd' = 232$ & $\Sigma f = 120$ $\bar{x}$ is :	2433.33	527.84	501.93	1017.24
130	The mean daily salary paid to all employees in a certain company was ₹600. The mean daily salaries paid to the male and female employees were ₹620 and ₹520 respectively. Male to female employees ratio in the company is :	3:2;	4:5	5:7;	4:1;
131	The pass result of 50 students who took up a class test is given below: Marks : 4 5 6 7 8 9 No of Students : 8 10 9 6 4 3	0.42	3.06	4.74	2.1
132	For a certain frequency table which has only been partly reproduced below for which the mean is 1.46 No of accidents: 0 1 2 3 4 5 Frequency : 46 f ₁ f ₂ 25 10 5 If $\Sigma f = 200$ Unknown frequents are :	$f_1 = 0, f_2 = 114$	$f_1 = 114, f_2 = 0$	$f_1 = 76, f_2 = 38$	$f_1 = 57, f_2 = 57$
133	The sum of the deviations of a certain number of observations measured from 4 is 72 and the sum of the deviations of the observations from 7 is -3. Mean of the observations is	6.88	25	3.63	Cannot be ascertained with given data;
134	The mean of a certain number of items is 42. If one more item 64 is	20	10	43	440



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	added to the data, the mean becomes 44. The no of items in the original data is				
135	The weighted average from the following observation is ₹46.23. Price per tonne (₹) : 45.60 50.70? Tonnes Purchased : 135 40 25 Simple average of observation is	₹ 46.23	₹ 46.26	₹ 66.63	₹ 46.24
136	In a certain factory a unit of work is completed by A in 4 minutes, by B in 5 minutes, by C in 6 minutes, by D in 10 minutes, and by E in 12 minutes. Average number of units of work completed per minute is	25/4	5/48	4/25	25/48
137	A person walks 8 km at 4km an hour, 6km at 3km an hour and 4km at 2km an hour. Average speed per hour is	0.33	2	3	0.5
138	It is the most suitable average when it is desired to give greater weight to smaller observations and less weight to larger ones. It is	AM	HM	GM	Median
139	Which one of the following is not a feature of Arithmetic Mean (AM)?	AM is affected very much by extreme values;	AM is widely used in the study of qualitative phenomenon;	AM provides a good basis for comparison;	AM is rigidly defined so different interpretation by different people are not possible;
140	Which one of the following is a feature of Harmonic Mean (HM)?	GM is affected much by the presence of externally small or large observations;	GM gives the actual value of the series;	GM is useful when a given phenomenon has a limit for lower value;	GM is imaginary if any of the observations is zero;
141	If b_{XY} and b_{YX} are regression coefficients of series X on series Y and regression coefficients of series Y on series X respectively then which one of the following is correct?	$b_{XY} \times b_{YX} = r$, where r is the correlation coefficient	$b_{XY} \times b_{YX} = r^2$, where r is the correlation coefficient	$b_{XY} \times b_{YX} = -r$, where r is the correlation coefficient	$b_{XY} \times b_{YX} = 1/r$, where r is the correlation coefficient
142	If b_{XY} and b_{YX} are regression coefficients of series X on series Y and regression coefficients of series Y on series X respectively then which one of the following is correct?	b_{XY} and b_{YX} will be either both positive or both negative	b_{XY} will be positive and b_{YX} will be negative	b_{XY} will be negative and b_{YX} will be positive	Nothing can be said like this, it depends on X & Y values
143	Which one of the following is correct?	Regression equation predicts maximum probable values of one variable for specified values of other variable	Regression equation predicts most likely values of one variable for specified values of other variable	Regression equation predicts maxi-min values of one variable for specified values of other variable	Regression equation predicts minimum probable values of one variable for specified values of other variable
144	If $r = 0.52$, $\sigma_X = 4.6$ & $\sigma_Y = 36.8$ then b_{XY} is equal to:	0.24	4.16	1	0.065



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SL NO	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
145	If b_{XY} & b_{YX} are regression coefficients between X on Y and Y on X respectively and r is the correlation coefficient between X and Y then :	$\frac{b_{xy} + b_{yx}}{2} \leq r$	$\frac{b_{xy} + b_{yx}}{2} \leq r^2$	$\frac{b_{xy} + b_{yx}}{2} \geq r$	$\frac{b_{xy} + b_{yx}}{2} \geq r^2$
146	If b_{XY} & b_{YX} are regression coefficients between X on Y and Y on X respectively then	$\sqrt{b_{xy} \times b_{yx}} \leq 1$	$\sqrt{b_{xy} \times b_{yx}} \geq 1$	$\sqrt{b_{xy} \times b_{yx}} = -1$	None of the above
147	In a regression equation:	Regression coefficient represents the increment in the value of the independent variable for a unit change in the value of the dependent variable	Regression coefficient represents the increment in the value of the dependent variable for a unit change in the value of the independent variable	Regression coefficient represents the mean value of the independent variable for a unit change in the value of the dependent variable	Regression coefficient represents the mean value of the dependent variable for a unit change in the value of the independent variable
148	If $r^2 = 0.3$ & $b_{XY} = -1.5$ then b_{YX} is equal to :	+ 1	- 0.2	- 1	- 0.45
149	In a bivariate regression analysis $\Sigma XY = 1355.25$, $(\Sigma X)(\Sigma Y) = 6396$, $\Sigma X^2 = 591.50$ & $\Sigma X = 52$. If there are 5 items then b_{YX}	1	0.97	0.667	1.5
150	$X = 1.36Y - 5.2$ & $Y = 0.61X + 1.51$ are two regression equations. Correlation coefficient between X & Y is :	.- 0.67	.- 0.911	0.911	0.67
151	In a bivariate regression analysis comprising of series X & Y, if $\Sigma(X - \bar{X})^2 = \Sigma(Y - \bar{Y})^2$ then :	$b_{XY} = b_{YX}$	$b_{XY} > b_{YX}$	$b_{XY} < b_{YX}$	Correlation co-efficient = 1
152	In a bivariate regression analysis, the difference between actual value of dependent variable and the predicted value of the dependent variable is called	Outlier	Slope	Residual	Scattered point
153	Consider the following results: $N = 12$, $\Sigma dx = 0$, $\Sigma dy = 4$, $\Sigma dx^2 = 1344$, $\Sigma dy^2 = 215$, $\Sigma dxdy = -4360$ Appropriate regression coefficient is -	- 0.821	1	5.67	-3.244
154	In a bivariate regression analysis for dependent variable if d = Actual value - Predicted value then at different values of independent variable	Best fit curve occurs when $d_1^2 + d_2^2 + \dots \dots \dots + d_n^2$ is minimum	Best fit curve occurs when $d_1^2 + d_2^2 + \dots \dots \dots + d_n^2$ is maximum	Best fit curve occurs when $d_1^2 + d_2^2 + \dots \dots \dots + d_n^2$ is zero	Best fit curve occurs when $d_1^2 + d_2^2 + \dots \dots \dots + d_n^2$ is one
155	Consider the following results: $N = 6$, $\Sigma y = 42$, $\Sigma y^2 = 318$, $b_{yx} = -11/34$, $\Sigma x^2 - 1/n(\Sigma x)^2 = 34$ Then b_{xy} is	11/34	11/24	-34/11	-11/24
156	In a bivariate analysis if two regression equations are $mx - y + 10 = 0$ & $-2x + 5y = 14$. If coefficient of correlation between x & y is $\frac{1}{\sqrt{10}}$. then value of m	10	$\frac{5}{2}$	4	1



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SL NO	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
	is:				
157	In a bivariate analysis if two regression equations are $8x - 10y + 66 = 0$ & $40x - 18y - 214 = 0$. Then $\bar{x}$, $\bar{y}$, the mean of the series $\bar{x}$ & $\bar{y}$ are respectively :	13,17	17,17	5/4.20/9	8,18
158	Probability theory is often referred to as :	Science of prediction	Science of uncertainty	Science of chance	Science of decision making
159	In general probability is :	A numerical value between 0 and 1, exclusive, describing the absolute possibility an event will occur	A numerical value between 0 and 1, inclusive, describing the absolute possibility an event will occur	A numerical value between 0 and 1, exclusive, describing the relative possibility an event will occur	A numerical value between 0 and 1, inclusive, describing the relative possibility an event will occur
160	The probability of two events A and B are 0.05 and 0.95 respectively. We can infer that	Event A is more probable to happen	Event B is more improbable to happen	Event B is more probable to happen	Event A & B are sure to happen
161	"Sun will disappear from blue sky today forever". With our available information & belief which one of the following value is most appropriate as probability to this event?	0.2	0.8	1	0
162	For an event Odds in favour are "five to two" This means that :	In a total of seven trials the event will occur five times :	In a total of seven trials the event will occur two times	In a total of five trials the event will occur two times	In a total of seven trials the event will not occur five times
163	Classical probability is based on the assumption that :	The outcomes of an experiment are already known	The probability of an outcome of an experiment is always 0.5	The probability of all outcomes in an experiment is always 1	The outcomes of an experiment are equally likely
164	If an experiment has a set of events that includes every possible outcomes, then the set is called :	Mutually Exclusive set	Mutually Exhaustive set	Collectively Exhaustive set	Exhaustive & Exclusive set
165	Classical probability is :	Probability of an event = Number of favourable outcome/Total number of possible outcome	Probability of an event = Number of favourable outcome/Total number of trials	Probability of an event = Number of possible outcome/Total number of trials	Probability of an event = Number of trials/ number of possible outcome
166	Addition rule for mutually exclusive events A & B is :	$P(A \text{ or } B) = P(A) + P(B)$	$P(A \text{ or } B) = P(A+B)$	$P(A \text{ or } B) = P(A) + P(B) - P(AB)$	$P(A \text{ or } B) = P(A+B - AB)$
167	If two unbiased coins are tossed once, the probability of getting both the heads is	0.25	0.5	0.75	1
168	The probability that a leap year selected at random contain 53 Sundays is :	0.143	1	0.286	0.48
169	A lot contains 10 items of which 3 are defective. Three items are chosen from the lot at random one after another without replacement. The probability that all the three are defective is	0.008	0.992	0.067	0.05



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SL NO	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4												
170	If $P(A) = 0.3, P(B) = 0.2$ and $P(C) = 0.1$, then assuming A,B and C are independent events, the probability of occurrence of at least one of the three events is :	0.7	0.8	0.006	0.496												
171	In IPL Kolkata Knight Riders plays 70% of their games at night (8 O'clock slot) and 30% during the day (4 O'clock slot). The team wins 50% of their night games and 90% of their day games. According to today's newspaper they won yesterday. The probability that the game was played at night is :	0.4667	0.5645	0.35	0.5												
172	When two events happen simultaneously which of the following is true?	The outcome of the first event always have an effect on the outcome of the second event	The outcome of the first event may or may not have an effect on the outcome of the second event	The outcome of the first event does not have any effect on the outcome of the second event	The outcome of the first event have always a 50% effect on the outcome of the second event												
173	A survey by Air travelers' association revealed that 60% of its members made airline reservations last year. Two members are selected at random. The probability that both the members made airline reservations last year is :	0.6	0.4	0.36	0.16												
174	If an unbiased coin is tossed once, then the two events head and tail are:	Mutually exclusive	Exhaustive	Equally likely	All these												
175	Sum of probability of an event A and its complement is ____	1	0	1/2	-1/2												
176	If p: q are the odds in favour of an event, then the probability of that event is :	p/q	$p/(p + q)$	$q/(p + q)$	None of these												
177	A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. The probability that the number of the drawn ball will be multiple of 3 or 7 is :	7/15	13/30	1/2	None of these												
178	Three coins are tossed together. The probability of getting exactly two heads is :	5/8	3/8	1/8	None												
179	Two dice are thrown together. The probability of the event that the sum of numbers shown is greater than 5 is:	13/18	15/18	1	None												
180	Probability of throwing an even number with an ordinary six faced die is :	1/2	1	0	-1/2												
181	4 coins are tossed. The probability that there are 2 heads is :	1/2	3/8	1/8	None of these												
182	A bag contains 10 red and 10 green balls. A ball is drawn from it. The probability that it will be green is :	1/10	1/3	1/2	None of these												
183	By using arithmetic mean method the index number from the following data is <table><tr><td>Commodity</td><td>Base price</td><td>Current price</td><td>Weight</td></tr><tr><td>Rice</td><td>30</td><td>52</td><td>8</td></tr><tr><td>Wheat</td><td>25</td><td>30</td><td>6</td></tr></table>	Commodity	Base price	Current price	Weight	Rice	30	52	8	Wheat	25	30	6	144.92	202.34	161.87	115.22
Commodity	Base price	Current price	Weight														
Rice	30	52	8														
Wheat	25	30	6														

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SL NO	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
	Fish1301503 Potato35495 Oil701057				
184	From the data given below the wholesale price index number for the year 1 taking year 0 as base using simple arithmetic average of relatives method is : Commodity Price year 0 Price year 1 A80120 B120150 C4080 D100150 E200240	180	112	134	149
185	Consider the following: Year: 1 2 3 4 5 6 7 8 Annual Sales (₹ '0000) 3.6 4.3 4.3 3.4 4.4 5.4 3.4 2.4 5 year moving average against year 4 is :	3.8	4	4.36	4.18
186	Consider the following: Year: 1 2 3 4 5 6 7 8 Annual Sales (₹'0000) 3.6 4.3 4.3 3.4 4.4 5.4 3.4 2.4 4 year centered moving average against year 6 is :	4.00	4.24	4.26	4.03
187	Consider the following table: Item Year 1 Year 2 Unit Price Qty. Unit Price Qty. I116315 II315820 III5181021 Pasche's price index of year 2 with respect to year 1 is	189.13	230.56	245.12	256.78
188	Fisher's ideal index for prices from the following data is: Item Base Year Current Year Unit Price Qty. Unit Price Qty. A86125 B105116 C158105	97.72	80.15	95.67	89.14
189	Consider the following series of observation: Year 1 2 3 4 5 6 7 8 9 10 11 Sales (₹) 2 6 1 5 3 7 2 6 4 8 3 4 year centered moving average against year 6 is	5.125	3.875	3.625	4.375
190	Consider the following series of observation. Year 1 2 3 4 5 6 7 8 9 10 11 Sales (₹) 2 6 1 5 3 7 2 6 4 8 3 5 year weighted moving average with weights 1, 2, 2, 2, 1 against year 6 is	5.125	3.875	3.625	4.375



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SL NO	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
191	Consider the following series of observation. Year 1 2 3 4 5 6 7 8 9 10 11 Sales (₹) 2 6 1 5 3 7 2 6 4 8 3 5 year moving average against year 6 is:	3.6	4.6	4.4	5.4
192	Consider the following: Commodity Base Current Weight Price Price (₹) (₹) A 22 40 8 B 15 15 6 C 80 90 7 D 110 130 3 E 25 30 5 Weighted aggregative index number is :	123.34	156.11	176.52	142.89
193	Consider the following: Commodity Base Current Weight Price Price (₹) (₹) A 22 40 8 B 15 15 6 C 80 90 7 D 110 130 3 E 25 30 5 Weighted A.M of price relative index number is	123.34	128.79	130.92	182.13
194	From the following find the Fisher's Quantity index Item Base Year Current Year Unit Price Qty. Unit Price Qty. A 8 6 12 5 B 10 5 11 6 C 17 8 8 5	32.76	72.34	78.12	12.74
195	From the following find the Simple average (AM) of Relative Quantity index Item Base Year Qty. Current Year Qty. A 8 12 B 10 11 C 15 10	111.45	108.89	32.45	115.46
196	From the following find the Simple average (GM) of Relative Quantity index Item Base Year Qty. Current Year Qty. A 8 12 B 10 11 C 15 10	100.23	111.45	190.15	103.23



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SL NO	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
197	From the following data the five year moving average against year 5 Year 1 2 3 4 5 6 7 8 9 Sales (₹) 36 43 43 34 44 54 34 24 14	40	43.6	34	41.8
198	From the following data the four year centered moving average against year 6 Year 1 2 3 4 5 6 7 8 9 Sales (₹) 36 43 43 34 44 54 34 24 14	40.25	40.625	35.25	40
199	From the following series find out a three year moving average against year 4 is Year 1 2 3 4 5 6 7 Values 12 14 15 17 18 20 23	20.33	18.33	16.67	15.33
200	From the following series find out a three year weighted moving average against year 4 with weights 1,4,1 is : Year 1 2 3 4 5 6 7 Values 12 14 15 17 18 20 23	20.17	16.83	18.17	15.17
201	Consider the following table: Commodity Weights Base price Current price p.u. p.u. (₹) (₹) A 40 16 30 B 25 40 70 C 5 0.5 1.5 D 20 5.12 7.25 E 10 2 2.5 Weighted A.M price relative index is	146.98	174.7	124.33	156.01
202	From the following four year centered moving average against year 4 is Year 1 2 3 4 5 6 7 Import (₹ m) 229 231 206 191 195 184 193	190.671	199.875	192.375	210



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ANSWERS TO MCQ BANK

SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
1	Two numbers are in the ratio 7: 9, if the sum of the numbers is 288, then the smaller number is :	126	1
2	When the number 1580 is increased in the ratio 5: 9, the new number is :	2844	4
3	The ratio of the number of faces to the number of edges of a box is :	1:2	3
4	Find the fourth proportional to 6, 8, 9 is:	12	2
5	Find the compounded ratio of: 15: 8 and 18: 5	27:4	1
6	Find the third proportional to $6\frac{1}{4}$ and 5	4	3
7	Find the Duplicate ratio of $8a : \sqrt{4b}$	$16a^2:b^2$	2
8	A class consists of 48 male students and 23 female students. Find the ratio of female students to total strength of the class :	23:71	4
9	If 4, 6, p, 27, q are in continued proportion, find the values of p and q.	$p = 9, q = 81$	2
10	If a Stadium having spectators divided into groups of Young Generation and Old Generation and the number of young spectators are 1525 and old spectators are 1875. Find the ratio of Total Spectators to Young Spectators.	136:61	4
11	Find two numbers whose mean proportional is 8 and the 1st number is square of the 2nd number.	16,4	3
12	AB LLP is expecting to receive a certain sum of money five years from now. If the present value of this sum is ₹38,400 at current market interest rate of 6% when the interest is compounded monthly, then how much amount they will receive after 5 years?	₹51,794	4
13	What sum will amount to ₹5480 in 6 years at 10% p.a. compound interest payable half-yearly?	₹ 3,501	3
14	Mr. Singh deposits ₹2,000 at the beginning of each year for 5 years. How much do these accumulate at the end of 5th year at an interest rate of 6%?	₹ 11,951	4
15	A buys a shop for ₹48,750 down payment and ₹60,000 after one year. If the money is worth 10% per year compounded half-yearly. Find the purchase price of the shop.	₹ 1,03,170	2
16	A loan of ₹20,000 has been issued for 5 years. Compute the amount to be repaid to the lender if simple interest is charged @ 8% per year.	₹ 28,000	1
17	Accumulated series of deposits as future sum money is classified as	Sinking Fund	2
18	A Laptop depreciated in value each year at 15% of its previous value and at the end of fourth year, the value was ₹36,331. Find its original value.	₹ 69,600	1
19	What would be the value of the 9th term?	68	2
20	What would be the sum of the first 11 terms of the series?	440	2
21	Which term of the series would be 82?	12	1
22	Find the next 6 terms for the series: 128, 139, 150, 161, 172, 183.	194, 205, 216, 227, 238, 249	4
23	For the given series: 66, 71, 76, 81, 86, 91, 96666, 671, 676. With 'n' terms in the series, what will be the value of 'd' ?	5	4
24	The First term is 748, Last Term is 28, and the value between two consecutive terms is 9 deducted, find the number of terms in the series.	9	1
25	Identify the type of series: $1+2+3+4+5$:	A.P	4
26	When a Bike had travelled for 78 km in 3 hours 45 minutes in the evening, how much distance would the Bike travelled in 2 hours?	41.60 km	1
27	A cycle travels a distance of 300 m in every second. What is the distance covered in an hour by the cycle?	1080 km	2
28	y is the yardstick to measure the performance of two vehicles, where $y = \text{Speed} \times \text{Time} \times \text{Distance}$. If Time taken by one of the vehicle (1st Vehicle) is increased by 10%, what would be the impact on the yardstick?	No change	1
29	If Toto covered 240 km at a speed of 40kmph while Scooty covered 180 km at a speed of 60 kmph, which one of them took less time to cover the distance and what was the time taken?	Scooty, 3 hrs	1



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SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
30	If A takes 3 hours to cover a distance of 60 km, B takes 2 hours to cover a distance of 50 km, how much time would A take more than B to cover 300 km?	3 hours	4
31	What will be the value of $(9^3)^2$?	59049×9	2
32	What will be the value of $3^6 \times 3^4 \times 3^{-2} \times 3^{-3} \times 3^6$?	3^{11}	4
33	Evaluate $\frac{2^{1/3} \times 8^{2/3} \times 6^{-5/4} \times 3^{-3/4} \times 9}{\sqrt[3]{16}}$	$\frac{1}{\sqrt[4]{2}}$	1
34	Find the value of the logarithm of 2nd number (b) for 3 consecutive numbers (a, b, c).	$\frac{1}{2} \times \log(1+ac)$	3
35	If $\log(7y-5) = 2$, find the value of y.	15	1
36	Compute $\frac{12!}{(8! \times 4!)}$	495	2
37	Find the number of permutations for 15 scooters if 3 scooters are to be considered at a time.	2730	1
38	Find the value of a, if $(a-2)! \times 24 = (a+1)!$	3	4
39	Find the square of the difference of the roots of $115 + 5(x^2 - 12x) = 0$	52	4
40	When α and β are the roots of $5x^2 - 7x + 9 = 0$ then find the values of $\alpha + \beta + 4$	$\frac{27}{5}$	1
41	In Venn diagram, Universal Set is represented by _____.	Rectangle	3
42	According to De Morgan's Law: $(B \cap C)' =$ _____.	$B' \cup C'$	1
43	What would be the factorial notation for: $11 \times 10 \times 9 \times 8 \times 7$	$\frac{11!}{6!}$	1
44	How many ways can 8 people get vaccinated from 8 vaccinators, assuming no vaccinator is idle?	40320 ways.	1
45	In how many different ways can 4 different cars, one of each of the 4 manufacturers, be parked in a parking lane?	24 ways	3
46	For what values of a and b, the product of roots would be equal to c?	$a = 1$	3
47	When are nature of roots real rather than imaginary?	If Discriminant is more than or equal to zero	4
48	For any sum of roots of quadratic equation, 'b' represents -	Coefficient of x	1
49	For any sum of roots of quadratic equation, 'a' represents -	Coefficient of x^2	2
50	If $b^2 - 4ac > 0$, is a perfect square, the nature of roots would be	Real and Unequal	4
51	$\lim_{x \rightarrow 3} (x^3 + 1)$	55	3
52	$\lim_{x \rightarrow 0} (4x^2 + 7x + 5)$	5	3
53	$\lim_{x \rightarrow 0} \left(\frac{x^2 - 16}{x - 4} \right)$	8	3
54	If $y = xe^x$ then $\frac{dy}{dx} = ?$	$e^x (x + 1)$	2
55	$f(x) = x^5/5 + x^4/4 + x^3/2 - 7x^2 + 18$. $f'(x) = ?$	$x^4 + x^3 + 3x^2 - 14x$	4
56	When $y = 4x$ then derivative of y is —	$4^x 2 \log 2$	3



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ANSWERS TO MCQ BANK

SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
57	Find the differential coefficient of $y = e^x/e^{x+1}$	$\frac{e^x}{(e^x + 1)^2}$	1
58	$y = (4x - 3)^3 + (5x - 2)^2$. Calculate y_1	$192x^2 + 26x + 58$	4
59	$\frac{x^2}{16} + \frac{y^2}{4} = 1$ is an implicit function. The derivative of this function is :	$-\frac{x}{4y}$	2
60	The result of differentiation of $y = \log [3x^2 + 13x + 10]$ is --	$\frac{6x + 13}{3x^2 + 13x + 10}$	3
61	A soft-drink manufacturer has a revenue function $R = 7Q^2 - 19Q + 30$ and the cost function is given by $9Q$. Find the number of cans produced by the firm, under perfect competition.	2	1
62	A tin manufacturer has a revenue function given by: $R = 11Q^2 - 110Q + 70$ and the cost function is given by: $C = 22Q$. Find the number of tins to be produced by the manufacturer.	6	2
63	A demand function is given by: $P = a - bQ$ and the cost function is given by $C = Q^2$. Find the value of Q for which profit will be maximum under perfect competition.	$\frac{a}{2(b + 1)}$	3
64	The demand function is given by: $P = 1400 - 25Q$ and the cost function is given by $C = 10Q^2$. Find the value of Q at the equilibrium point.	20	2
65	A revenue function is given by $R = 3Q^2 - 8Q + 15$ and the cost function is given by: $C = 28Q$. Find the value of Q for achieving highest profit.	6	3
66	A demand function is given by: $P = 1500 - 3Q$ and the cost function is given by: $C = 12Q^2$. Find the value of Q at the equilibrium point.	50	1
67	A firm has a fixed production cost of ₹ 90 and a marginal variable production cost of ₹ 9. The price of the product is ₹ 18. Find the cost function, revenue function, and the value of Q at the Break Even point.	$9Q + 90; 18Q; 10$	2
68	A sugar industry has a fixed cost of ₹ 290 and a marginal cost of 50 paise. He sells sugar at the price of ₹ 15/kg. Find the quantity of sugar sold for breaking even.	20	3
69	A cotton mill has a fixed cost of ₹ 1540 and a marginal cost of ₹ 33. He sells a shirt at a price of ₹ 110. Find the minimum number of shirts sold so the mill incurs no loss.	20	2
70	Given: $C(x) = 900 + 30x + 0.6x^2$, $P = 90$. Find the value of x at equilibrium point.	50	2
71	Given: $C(x) = 2x^2 - 3x - 12$, $P = 33$. Find the value of x at equilibrium point.	9	1
72	Given: $R(x) = 3x^2 + 24x + 2$, $MC(x) = 42$ and the fixed cost is 90. Find the value of x at equilibrium point.	3	2
73	Given: $R(x) = 6x^2 - 11x - 35$, $C(x) = 5x^2 - 3x + 16$. Find the value of x for which profit is maximum.	4	2
74	Given: $R(x) = 20x^2 - 15x - 10$, $C(x) = x^2 + 99x + 27$. Find the value of x for which profit is maximum	3	1
75	Given: $R(x) = 3x^2 + 4x + 2$, $MC(x) = 16$ and the fixed cost is 24. Find the profit maximising value of x under perfect competition.	2	4
76	A manufacturer has a monthly fixed cost of ₹ 1, 00,000 and a production cost of ₹ 50 per unit produced. The product is sold at ₹ 75. Find the cost function and the number of products be sold by the manufacturer to have break even.	$50x + 1,00,000; 4000$	2
77	A cement industry has a yearly fixed cost of ₹ 96,000 and a monthly production cost of ₹ 13 per unit produced. The product is sold at ₹ 39 per unit. Find the cost function	$13x + 8000$	1
78	Find the monthly profit function if a firm's yearly fixed cost is ₹ 60,000 and yearly production cost is ₹ 120 per piece. Each unit is sold at ₹ 15.	$\pi = 5x - 5000$	1
79	Given: $C(x) = 9x + 350$ and $P = 14$. Find the condition of getting break-even point	$5x - 350 = 0$	1
80	Given: $C(x) = 9x + 350$ and $P = 14$. Find the break-even quantity	70	2
81	$f(x) = 6x^2 + 11x - 35$	Minimum	2
82	$f(x) = -4x^2 - 7x - 35$	Maximum	1
83	$f(x) = 20x^2 - 15x - 10$	Minimum	2
84	$f(x) = 3x^2 - 4x + 2$	Minimum	2
85	$f(x) = -x + 6x + 18$	Maximum	1



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SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
86	$f(x) = 9x^2 - 6x + 1$	Minimum	2
87	$f(x) = -x^2 + 4x - 2$	Maximum	1
88	$f(x) = 3x^2 + 2$	Minimum	2
89	$f(x) = x^2 - 3x$	Minimum	2
90	$f(x) = ax^3 + bx^2 + cx + d$; $a < 0$; $b < 0$; $c > 0$ and $a < b$	Maximum	1
91	$f(x) = x^3 - 9x^2 + 81x + 70$	No curvature	3
92	$f(x) = (2/3)x^3 + (9/2)x^2 - 11x - 21$	Maximum, $x = -11/2$; Minimum, $x = 1$	2
93	$f(x) = (4/3)x^2 - 5x^2 + 4x - 9$	Maximum, $x = 1/2$; Minimum, $x = 2$	2
94	$f(x) = x^3 - 2x^2 - 4x$	Maximum, $x = -2/3$; Minimum, $x = 2$	1
95	$f(x) = x^3/3 - 4.5x^2 - 8x + 2$	Maximum, $x = 1$; Minimum, $x = 8$	1
96	$f(x) = x^3/3 - 3/2x^2 + 2x - 3$	Maximum, $x = 1$; Minimum, $x = 2$	2
97	$f(x) = 2/3x^2 - 3/2x^2 - 5x$	Maximum, $x = -1$; Minimum, $x = 5/2$	1
98	$f(x) = -x^3/3 + 4x^2 - 15x$	Maximum, $x = 5$; Minimum, $x = 3$	2
99	$f(x) = x^3/3 - x^2/2 - 2x$	Maximum, $x = -1$; Minimum, $x = 2$	1
100	$f(x) = x^2/3 + 2x^2 + 3x + 7$	Maximum, $x = -3$; Minimum, $x = -1$	1
101	The word 'Statistics' has been derived from the Latin word 'Status' which means :	A political state	4
102	Which one of the following has synonymous words?	Staistik, Statista, Stats	2
103	Statistics is a tool in the hands of mankind :	To translate complex facts into simple and understandable statements of facts	1
104	The word statistics in plural form means :	The numerical data collected in a systematic manner with some definite aim or object in view such as the number of persons unemployed in a country.	2
105	The word statistics in singular form means :	The science of statistics that deals with the principles, devices or statistical methods of collecting, analyzing and interpreting numerical data	4
106	Which one of the following is not a characteristic of Plural form of Statistics?	Statistics are always graphically expressed	3
107	Statistics in singular sense has :	4 stages	4
108	Measurement of skewness is :	Analysis of data	1
109	Find the odd man out from the following :	Sampling	3
110	Raw data is :	Information which can't be put to use directly	2
111	There are four person named A, B, C, & D. A is a sales person whereas B, C, D are students. A collected sales figures for his region and B, C, D used these data in order to study sales pattern. Which one of the following is correct?	B uses secondary data	1
112	Which one of the following is a method of collecting primary data?	Information collected by Government through Census	3
113	Classification of data is :	The process of arranging things in groups or classes according to their common characteristics and	2



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SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
		affinities	
114	In Statistics classification :	Separates data into different but related parts	3
115	Which one of the following is a characteristic of a good classification?	Classification should be stable	3
116	When the basis of classification is according to differences in time it is called	Temporal Classification	1
117	Dichotomous Classification is :	When data is classified into two groups according to presence or absence of one attribute	4
118	Tabulation Condenses classified data so that:	Data may be more easily understood	1
119	Tabulation is preferred to textual presentation because :	Tabulation is a must for diagrammatic representation	2
120	With respect to accuracy :	Tabular presentation is preferable to Diagrammatic presentation	3
121	Which one of the following is a Positional Average?	Mode;	3
122	Because of heavy rain on Sunday average rainfall of a city for the week increased to 0.6 inch from the average rainfall 0.3 inch measured from Monday to Saturday. The rainfall on Sunday was-	2.4 inch;	1
123	The mean of the frequency distribution ((x f ₁ , 1), (x ₂ , f ₂), (x ₃ , f ₃).....(x _n , f _n)) is :	$\frac{\sum Fx}{n}$	3
124	$\sum_{x=1}^{20} x = 54120$; While computing this, it was observed that two entries were wrongly entered as 850 and 320 instead of 580 and 230. Correct value of x is:	2688;	1
125	$\Sigma(X - \bar{X})$ is always equal to :	0;	3
126	The sum of the squares of deviations of a set of observations is the minimum when deviations are taken from the :	Arithmetic Mean;	3
127	If each of the values of a variable x with mean of x, is multiplied by K then the new mean of the variable is :	$k\bar{x}$	2
128	Assumed mean is 35, $\sum fd = -425$ & $\sum f = 63$, x is:	28.25	3
129	If $A = 500$, $i = 1000$ & $\sum fd' = 232$ & $\sum f = 120$ x is :	2433.33	1
130	The mean daily salary paid to all employees in a certain company was ₹600. The mean daily salaries paid to the male and female employees were ₹620 and ₹520 respectively. Male to female employees ratio in the company is :	4:1;	4
131	The pass result of 50 students who took up a class test is given below: Marks : 4 5 6 7 8 9 No of Students : 8 10 9 6 4 3	2.1	4
132	For a certain frequency table which has only been partly reproduced below for which the mean is 1.46 No of accidents: 0 1 2 3 4 5 Frequency : 46 f ₁ f ₂ 25 10 5 If $\sum f = 200$ Unknown frequents are :	$f_1 = 76, f_2 = 38$	3
133	The sum of the deviations of a certain number of observations measured from 4 is 72 and the sum of the deviations of the observations from 7 is -3. Mean of the observations is	6.88	1
134	The mean of a certain number of items is 42. If one more item 64 is added to the data, the mean becomes 44. The no of items in the original data is	10	2
135	The weighted average from the following observation is ₹46.23. Price per tonne (₹) : 45.60 50.70? Tonnes Purchased : 135 40 25 Simple average of observation is	₹ 46.26	2
136	In a certain factory a unit of work is completed by A in 4 minutes, by B in 5 minutes, by C in 6 minutes, by D in 10 minutes, and by E in 12 minutes. Average number of units of work completed per minute is	4/25	3



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SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
137	A person walks 8 km at 4km an hour, 6km at 3km an hour and 4km at 2km an hour. Average speed per hour is	3	3
138	It is the most suitable average when it is desired to give greater weight to smaller observations and less weight to larger ones. It is	HM	2
139	Which one of the following is not a feature of Arithmetic Mean (AM)?	AM is widely used in the study of qualitative phenomenon;	2
140	Which one of the following is a feature of Harmonic Mean (HM)?	GM is useful when a given phenomenon has a limit for lower value;	3
141	If b_{XY} and b_{YX} are regression coefficients of series X on series Y and regression coefficients of series Y on series X respectively then which one of the following is correct?	$b_{XY} \times b_{YX} = r^2$, where r is the correlation coefficient	2
142	If b_{XY} and b_{YX} are regression coefficients of series X on series Y and regression coefficients of series Y on series X respectively then which one of the following is correct?	b_{XY} and b_{YX} will be either both positive or both negative	1
143	Which one of the following is correct?	Regression equation predicts most likely values of one variable for specified values of other variable	2
144	If $r = 0.52$, $\sigma_X = 4.6$ & $\sigma_Y = 36.8$ then b_{XY} is equal to:	0.065	4
145	If b_{XY} & b_{YX} are regression coefficients between X on Y and Y on X respectively and r is the correlation coefficient between X and Y then :	$\frac{b_{xy} + b_{yx}}{2} \geq r$	3
146	If b_{XY} & b_{YX} are regression coefficients between X on Y and Y on X respectively then	$\sqrt{\frac{b_{xy}}{b_{yx}} \times \frac{b_{yx}}{b_{xy}}} \geq 1$	1
147	In a regression equation:	Regression coefficient represents the increment in the value of the dependent variable for a unit change in the value of the independent variable	2
148	If $r^2 = 0.3$ & $b_{XY} = -1.5$ then b_{YX} is equal to :	- 0.2	2
149	In a bivariate regression analysis $\Sigma XY = 1355.25$, $(\Sigma X)(\Sigma Y) = 6396$, $\Sigma X^2 = 591.50$ & $\Sigma Y^2 = 52$. If there are 5 items then b_{YX}	1.5	4
150	$X = 1.36Y - 5.2$ & $Y = 0.61X + 1.51$ are two regression equations. Correlation coefficient between X & Y is :	0.911	3
151	In a bivariate regression analysis comprising of series X & Y, if $\Sigma(X - \bar{X})^2 = \Sigma(Y - \bar{Y})^2$ then :	$b_{XY} = b_{YX}$	1
152	In a bivariate regression analysis, the difference between actual value of dependent variable and the predicted value of the dependent variable is called	Residual	3
153	Consider the following results: $N = 12$, $\Sigma dx = 0$, $\Sigma dy = 4$, $\Sigma dx^2 = 1344$, $\Sigma dy^2 = 215$, $\Sigma dxdy = -4360$ Appropriate regression coefficient is -	-.3.244	4
154	In a bivariate regression analysis for dependent variable if d = Actual value – Predicted value then at different values of independent variable	Best fit curve occurs when $d_1^2 + d_2^2 + \dots + d_n^2$ is minimum	1
155	Consider the following results: $N = 6$, $\Sigma y = 42$, $\Sigma y^2 = 318$, $b_{yx} = -11/34$, $\Sigma x^2 - 1/n(\Sigma x)^2 = 34$, Then b_{xy} is	-.11/24	4
156	In a bivariate analysis if two regression equations are $mx - y + 10 = 0$ & $-2x + 5y = 14$. If coefficient of correlation between x & y is $\frac{1}{\sqrt{10}}$. then value of m is:	4	3
157	In a bivariate analysis if two regression equations are $8x - 10y + 66 = 0$ & $40x - 18y - 214 = 0$. Then x , y, the mean of the series $\bar{x}$ & $\bar{y}$ are respectively :	13,17	1



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158	Probability theory is often referred to as :	Science of uncertainty	2
159	In general probability is :	A numerical value between 0 and 1, inclusive, describing the relative possibility an event will occur	4
160	The probability of two events A and B are 0.05 and 0.95 respectively. We can infer that	Event B is more probable to happen	3
161	"Sun will disappear from blue sky today forever". With our available information & belief which one of the following value is most appropriate as probability to this event?	0	4
162	For an event Odds in favour are "five to two" This means that :	In a total of seven trials the event will occur five times :	1
163	Classical probability is based on the assumption that :	The outcomes of an experiment are equally likely	4
164	If an experiment has a set of events that includes every possible outcomes, then the set is called:	Collectively Exhaustive set	3
165	Classical probability is :	Probability of an event= Number of favourable outcome/Total number of possible outcome	1
166	Addition rule for mutually exclusive events A & B is :	$P(A \text{ or } B) = P(A) + P(B)$	1
167	If two unbiased coins are tossed once, the probability of getting both the heads is	0.25	1
168	The probability that a leap year selected at random contain 53 Sundays is :	0.286	3
169	A lot contains 10 items of which 3 are defective. Three items are chosen from the lot at random one after another without replacement. The probability that all the three are defective is	0.008	1
170	If $P(A) = 0.3, P(B) = 0.2$ and $P(C) = 0.1$, then assuming A,B and C are independent events, the probability of occurrence of at least one of the three events is :	0.496	4
171	In IPL Kolkata Knight Riders plays 70% of their games at night (8 O'clock slot) and 30% during the day (4 O'clock slot). The team wins 50% of their night games and 90% of their day games. According to today's newspaper they own yesterday. The probability that the game was played at night is :	0.5645	2
172	When two events happen simultaneously which of the following is true?	The outcome of the first event may or may not have an effect on the outcome of the second event	2
173	A survey by Air travelers' association revealed that 60% of its member made airline reservations last year. Two members are selected at random. The probability that both the members made airline reservations last year is :	0.36	3
174	If an unbiased coin is tossed once, then the two events head and tail are:	All these	4
175	Sum of probability of an event A and its complement is __	1	1
176	If p: q are the odds in favour of an event, then the probability of that event is :	$p/(p + q)$	2
177	A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. The probability that the number of the drawn ball will be multiple of 3 or 7 is :	13/30	2
178	Three coins are tossed together. The probability of getting exactly two heads is :	3/8	2
179	Two dice are thrown together. The probability of the event that the sum of numbers shown is greater than 5 is:	13/18	1
180	Probability of throwing an even number with an ordinary six faced die is :	1/2	1
181	4 coins are tossed. The probability that there are 2 heads is :	3/8	2
182	A bag contains 10 red and 10 green balls. A ball is drawn from it. The probability that it will be green is :	1/2	3
183	By using arithmetic mean method the index number from the following data is Commodity Base Current price price Weight Rice 30 52 8 Wheat 25 30 6 Fish 130 150 3 Potato 35 49 5 Oil 70 105 7	144.92	1

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SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
184	From the data given below the wholesale price index number for the year 1 taking year 0 as base using simple arithmetic average of relatives method is: Commodity Price year 0 Price year 1 A 80 120 B 120 150 C 40 80 D 100 150 E 200 240	149	4
185	Consider the following: Year: 1 2 3 4 5 6 7 8 Annual Sales (₹ '0000) 3.6 4.3 4.3 3.4 4.4 5.4 3.4 2.4 5 year moving average against year 4 is :	4.36	3
186	Consider the following: Year: 1 2 3 4 5 6 7 8 Annual Sales (₹'0000) 3.6 4.3 4.3 3.4 4.4 5.4 3.4 2.4 4 year centered moving average against year 6 is :	4.03	4
187	Consider the following table: Item Year 1 Year 2 Unit Price Qty. Unit Price Qty. I 1 16 3 15 II 3 15 8 20 III 5 18 10 21 Pasche's price index of year 2 with respect to year 1 is	230.56	2
188	Fisher's ideal index for prices from the following data is: Item Base Year Current Year Unit Price Qty. Unit Price Qty. A 8 6 12 5 B 10 5 11 6 C 15 8 10 5	97.72	1
189	Consider the following series of observation: Year 1 2 3 4 5 6 7 8 9 10 11 Sales (₹) 2 6 1 5 3 7 2 6 4 8 3 4 year centered moving average against year 6 is	4.375	4
190	Consider the following series of observation. Year 1 2 3 4 5 6 7 8 9 10 11 Sales (₹) 2 6 1 5 3 7 2 6 4 8 3 5 year weighted moving average with weights 1, 2, 2, 2, 1 against year 6 is	4.375	4
191	Consider the following series of observation. Year 1 2 3 4 5 6 7 8 9 10 11 Sales (₹) 2 6 1 5 3 7 2 6 4 8 3 5 year moving average against year 6 is:	4.6	2
192	Consider the following: Commodity Base Current Weight Price Price (₹) (₹) A 22 40 8 B 15 15 6 C 80 90 7 D 110 130 3 E 25 30 5 Weighted aggregative index number is :	123.34	1
193	Consider the following: Commodity Base Current Weight Price Price (₹) (₹) A 22 40 8 B 15 15 6 C 80 90 7 D 110 130 3	130.92	3



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SL NO	QUESTIONS	CORRECT ANSWER	ANSWER CODE
	E 25 30 5 Weighted A.M of price relative index number is		
194	From the following find the Fisher's Quantity index Item Base Year Current Year Unit Price Qty. Unit Price Qty. A 8 6 12 5 B 10 5 11 6 C 17 8 8 5	78.12	3
195	From the following find the Simple average (AM) of Relative Quantity index Item Base Year Qty. Current Year Qty. A 8 12 B 10 11 C 15 10	108.89	2
196	From the following find the Simple average (GM) of Relative Quantity index Item Base Year Qty. Current Year Qty. A 8 12 B 10 11 C 15 10	103.23	4
197	From the following data the five year moving average against year 5 Year 1 2 3 4 5 6 7 8 9 Sales (₹) 36 43 43 34 44 54 34 24 14	41.8	4
198	From the following data the four year centered moving average against year 6 Year 1 2 3 4 5 6 7 8 9 Sales (₹) 36 43 43 34 44 54 34 24 14	40.25	1
199	From the following series find out a three year moving average against year 4 is Year 1 2 3 4 5 6 7 Values 12 14 15 17 18 20 23	16.67	3
200	From the following series find out a three year weighted moving average against year 4 with weights 1,4,1 is : Year 1 2 3 4 5 6 7 Values 12 14 15 17 18 20 23	16.83	2
201	Consider the following table: Commodity Weights Base price Current price p.u. p.u. (₹) (₹) A 40 16 30 B 25 40 70 C 5 0.5 1.5 D 20 5.12 7.25 E 10 2 2.5 Weighted A.M price relative index is	174.7	2
202	From the following four year centered moving average against year 4 is Year 1 2 3 4 5 6 7 Import (₹ m) 229 231 206 191 195 184 193	199.875	2