FOUNDATION EXAMINATION **Syllabus -2022**

PRACTICE TEST PAPER **TERM– JUNE 2026**

PAPER - 3

FUNDAMENTALS OF BUSINESS MATHEMATICS AND STATISTICS

`Time Allowed: 1 Hour Full Marks: 100

Answer all questions. Each question carries 2 marks.

1.	Two numbers are in the ratio 7: 9, if the sum of the numbers is 288, then the smaller number is:		
	(a)	126	O
	(b)	288	O
	(c)	162	O
	(d)	144	O
2.	If = $\frac{3x+4}{4x+9}$ is the duplicate ratio of 4:5, find 'x'.		
	(a)	4.445	O
	(b)	4	O
	(c)	44.4	O
	(d)	3	O
3.	Amit deposited ₹ 1,200 to a bank at 9% simple interest p.a. find the total interest that he will get at the end of 3 years.		
	(a)	234	O
	(b)	432	O
	(c)	324	O
	(d)	None of these	O
4.	If the simple interest on ₹ 20,000 increases by ₹ 4,000 with the increase of time by 4 years. Find 'r'.		
	(a)	1.25 %	O
	(b)	0.05 %	O
	(c)	20 %	O
	(d)	5 %	O
5.	If Mr. X deposits ₹ 5,000 today in a bank which pays 8% interest compounded annually, how much the deposit will grow at the end of 10th year?		
	(a)	10795	O

	(b)	17095	O
	(c)	19705	O
	(d)	15970	O
6.	Determine 8th term for the series: 11, 33, 99, 297, 891.		
	(a)	72171	O
	(b)	24057	O
	(c)	20457	O
	(d)	8019	O
7.	cycle travels a distance of 300 m in every second. What is the distance covered in an hour by the cycle?		
	(a)	3000 km	O
	(b)	1080 km	O
	(c)	1800 km	O
	(d)	2160 km	O
8.	If Set A = {2, 4, 6, 8, 10}; Set B = {1, 3, 5, 7, 9}; Set C = {1, 2, 3, 4, 5} and Set D = {6,7,8,9,10}. Find: A ∩ D		
	(a)	{6, 8, 10}	O
	(b)	{7, 9}	O
	(c)	{2, 4}	O
	(d)	{1,2,3,4,5,6,7,8,9,10}	O
9.	If A= (1,2,3,4), B= (3,5,7), find AΔB.		
	(a)	(1,2,4)	O
	(b)	(1,2,4,5,7)	O
	(c)	(5,7)	O
	(d)	None of these	O
10.	Solve: $6^{2x+4} = 3^{3x} \times 2^{x+8}$		
	(a)	2	O
	(b)	0	O
	(c)	4	O

	(d)	3	O
11.	Find the value of $(243)^{-\frac{1}{5}}$		
	(a)	$\frac{1}{3}$	O
	(b)	$-\frac{1}{3}$	O
	(c)	3	O
	(d)	None of these	O
12.	If $a^x = b$, $b^y = c$, $c^z = a$. find 'xyz'.		
	(a)	a	O
	(b)	a^1	O
	(c)	a^{-1}	O
	(d)	1	O
13.	If $\log_2 x + \log_4 x + \log_{16} x = \frac{21}{4}$ find x		
	(a)	64	O
	(b)	2	O
	(c)	$\frac{3}{4}$	O
	(d)	8	O
14.	Find value of $\log_b a \ \log_c b \times \log_a c$.		
	(a)	abc	O
	(b)	1	O
	(c)	0	O
	(d)	$\log_{acb} abc$	O
15.	Find the number of 5 digit numbers that can be formed with the digits 8, 6,4,3,2,1,5,9.		
	(a)	7,620	O
	(b)	6,270	O

	(c)	6,720	O
	(d)	2,076	O
16.	Solve: $x^{\frac{2}{3}} + x^{\frac{1}{3}} = 2$		
	(a)	x= 8,1	O
	(b)	x= -8,1	O
	(c)	x= -8, -1	O
	(d)	x= 8, -1	O
17.	Solve for *n*, given $\frac{n_{p5}}{n_{p3}} = 2$		
	(a)	7,1	O
	(b)	5,2	O
	(c)	2,1	O
	(d)	1,7	O
18.	Given the function: f(x) = $5^{-2x} - 1$, $-1 \leq x < 0$, Find f (– 1).		
	(a)	24	O
	(b)	9	O
	(c)	$\frac{7}{6}$	O
	(d)	$\frac{4}{3}$	O
19.	Find the value of: $\lim_{x\to 1} \frac{x^3-1}{x^2-1}$		
	(a)	$\frac{3}{2}$	O
	(b)	$\frac{2}{3}$	O
	(c)	$-\frac{3}{2}$	O
	(d)	$-\frac{2}{3}$	O
20.	Evaluate: $\lim_{x\to\infty} \frac{(x+1)(2x+3)}{(x+2)-(3x+4)}$		
	(a)	$\frac{1}{3}$	O

	(b)	0	O
	(c)	$\frac{2}{3}$	O
	(d)	$\frac{3}{2}$	O
21.	Measurement of skewness is		
	(a)	Analysis of data	O
	(b)	Presentation of data	O
	(c)	Organisation of data	O
	(d)	Interpretation of data	O
22.	Which one of the following is a method of collecting primary data?		
	(a)	Information collected through newspapers and periodicals	O
	(b)	Information obtained from the publications of trade associations	O
	(c)	Information collected by Government through Census	O
	(d)	Information gathered from research paper published in research journal	O
23.	Which one of the following is a method of collecting primary data?		
	(a)	The process of arranging things in groups or classes according to their common frequencies	O
	(b)	The process of arranging things in groups or classes according to their common characteristics and affinities	O
	(c)	The process of arranging things in groups or classes according to their common differences and tally marks	O
	(d)	The process of arranging things in groups or classes according to their common deviations from respective mean	O
24.	If A = 500, i = 1000 & $\Sigma fd' = 232$ & $\Sigma f = 120$ x is :		
	(a)	2433.33	O
	(b)	527.84	O
	(c)	501.93	O
	(d)	1017.24	O
25.	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		
	(a)	0.42	O

	(b)	3.06	O
	(c)	4.74	O
	(d)	2.1	O
26.	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 f1 f2 25 10 5 If Σf = 200 Unknown frequents are:		
	(a)	*f1 = 0, f2 = 114*	O
	(b)	*f1 = 114, f2 = 0*	O
	(c)	*f1 = 76, f2 = 38*	O
	(d)	*f1 = 57, f2 = 57*	O
27.	The sum of deviations of a certain number of observations (ungrouped data) measured from 4 is 72 and the sum of the deviations of the observations from 7 is –3. Find the number of observations and their mean.		
	(a)	n=25, $\bar{X}$ =6.88	O
	(b)	n=25, $\bar{X}$ =1.12	O
	(c)	n=23, $\bar{X}$ =7.13	O
	(d)	n=23, $\bar{X}$ =0.87	O
28.	There were 50 students in a class. 10 failed whose average marks were 2.5. The total marks of class were 200. Find average marks of passed students		
	(a)	16.67	O
	(b)	4.375	O
	(c)	12.5	O
	(d)	15.83	O
29.	If G.M of x and y are 5 & 10, find G.M of $\frac{y}{x}$		
	(a)	1	O
	(b)	0	O
	(c)	$\frac{1}{2}$	O
	(d)	2	O

30.	Find Median from following data: 17, 19, 21, 13, 16, 18, 24, 22, 20, 26		
	(a)	19.5	O
	(b)	19	O
	(c)	20	O
	(d)	18.5	O
31.	If R = 0.8, ΣD2 = 33, find N.		
	(a)	10	O
	(b)	9	O
	(c)	11	O
	(d)	None of these	O
32.	If b_{yx} = 0.2, b_{xy} = 0.3 & σ_x = 2, find σ_y .		
	(a)	2.66	O
	(b)	1.63	O
	(c)	- 2.66	O
	(d)	- 1.63	O
33.	Find b_{xy} from the regression line 4x -y - 11 = 0.		
	(a)	$\frac{1}{4}$	O
	(b)	$-\frac{1}{4}$	O
	(c)	$\frac{11}{4}$	O
	(d)	$-\frac{11}{4}$	O
34.	Past data on household income and expenditure reveals that (a) The average absolute increase in income in relation to increase in expenditure is ₹1.5 crore and (b) The average absolute increase in expenditure in relation to increase in income in ₹50 crore Find the coefficient of correlation between household income and expenditure.		
	(a)	1.5	O
	(b)	0.866	O

	(c)	1.414	O
	(d)	0.75	O
35.	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		
	(a)	10	O
	(b)	5/2	O
	(c)	4	O
	(d)	1	O
36.	In a bivariate regression analysis for dependent variable if d = *Actual value – Predicted value* then at different values of independent variable		
	(a)	Best fit curve occurs when $d_1^2 + d_2^2 + \ldots \ldots \ldots + d_n^2$ is minimum	O
	(b)	Best fit curve occurs when $d_1^2 + d_2^2 + \ldots \ldots \ldots + d_n^2$ is maximum	O
	(c)	Best fit curve occurs when $d_1^2 + d_2^2 + \ldots \ldots \ldots + d_n^2$ is Zero	O
	(d)	Best fit curve occurs when $d_1^2 + d_2^2 + \ldots \ldots \ldots + d_n^2$ is One	O
37.	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 x & y care respectively		
	(a)	13, 17	O
	(b)	17, 17	O
	(c)	5/4, 20/9.	O
	(d)	8, 18	O
38.	One card is drawn at random from a well-shuffled pack of 52 cards. What is the probability that it will be a queen?		
	(a)	$\frac{4}{13}$	O
	(b)	$\frac{1}{4}$	O
	(c)	$\frac{1}{13}$	O
	(d)	4	O
39.	Two cards are drawn from a pack of cards at random. What is the probability that it will be two kings?		

	(a)	1/663	O
	(b)	6/663	O
	(c)	13/102	O
	(d)	1/221	O
40.	Tickets are numbered from 1 to 100. They are well shuffled and a ticket is drawn at random. What is the probability that the drawn ticket has: an even number?		
	(a)	1/6	O
	(b)	1/5	O
	(c)	1/2	O
	(d)	1/4	O
41.	Two cards are thrown at once. What is Prob. Of getting doublets		
	(a)	1/6	O
	(b)	1/3	O
	(c)	6	O
	(d)	3	O
42.	Three events A, B & C are mutually excusive, equally likely & exhaustive. What is the Prob. of complementary of event A.		
	(a)	$\frac{1}{3}$	O
	(b)	$\frac{2}{3}$	O
	(c)	1	O
	(d)	$\frac{1}{2}$	O
43.	A coin and a dice are thrown. What is prob. of getting a head or an even number.		
	(a)	$\frac{1}{2}$	O
	(b)	$\frac{1}{4}$	O
	(c)	$\frac{3}{4}$	O
	(d)	$\frac{1}{3}$	O
44.	A ball is drawn at random from a box containing 6 red balls, 4 white balls and 5 blue balls. Determine the probability that it is : Red or White?		

	(a)	0.267	O
	(b)	0.667	O
	(c)	0.40	O
	(d)	0.43	O
45.	Two cards are drawn at random one by one without replacement from a well-shuffled pack of 52 cards. What is the probability that both are aces?		
	(a)	4/52	O
	(b)	1/221	O
	(c)	25/102	O
	(d)	33/221	O
46.	Net monthly income of an employee was ₹ 8,000 P.M in 2003. The consumer price index number was 80 in 2003. It became 300 in 2023. Calculate the additional D.A to be paid to the employee if he has to be compensated.		
	(a)	22,000	O
	(b)	30,000	O
	(c)	8,000	O
	(d)	24,000	O
47.	Compute the index number of business activity from the following data: **Industrial Activity** / **Index** / **Weight** Industrial Production / 250 / 36 Mineral Production / 135 / 7 Internal Trade / 200 / 24 Financial Activity / 135 / 20 Exports & Imports / 325 / 7 Shipping Activity / 300 / 6		
	(a)	201.65	O
	(b)	120.65	O
	(c)	251.20	O
	(d)	215.20	O

48. From the following data prepare Laspeyres's quantity index numbers for the year 2 taking year 1 as the base

Item	Year 1		Year 2	
	Unit price	Quantity	Unit price	Quantity
I	5	10	4	12
II	8	6	7	7
III	6	3	5	4

(a)	120.60	O
(b)	120.65	O
(c)	120.68	O
(d)	120.69	O

49. From the following data prepare Paasche's quantity index numbers for the year 2 taking year 1 as the base

Item	Year 1		Year 2	
	Unit price	Quantity	Unit price	Quantity
I	5	10	4	12
II	8	6	7	7
III	6	3	5	4

(a)	120.65	O
(b)	120.60	O
(c)	120.69	O
(d)	120.68	O

50. From the following data prepare Fisher's quantity index numbers for the year 2 taking year 1 as the base

Item	Year 1		Year 2	
	Unit price	Quantity	Unit price	Quantity
I	5	10	4	12
II	8	6	7	7
III	6	3	5	4

(a)	120.65	O
(b)	120.69	O

	(c)	120.60	O
	(d)	120.68	O