FINALTERM EXAMINATION

MTH302- Business Mathematics & Statistics (Session - 1)

Marks: 70

Question No: 1 (Marks: 1) - Please choose one

What variation does moving average method eliminate?

- ▶ Seasonal
- ▶ Cyclical
- ▶ Irregular
- ▶ Secular trend

Question No: 2 (Marks: 1) - Please choose one

Which of the following is **not** an example of seasonal variation?

- ▶ sales of snow blowers
- ▶ plant and flower sales
- ▶ use of electricity
- ▶ annual earnings for a large corporation

Question No: 3 (Marks: 1) - Please choose one

A college has 10 basketball players. A 5-member team and a captain will be selected out of these 10 players. How many different selections can be made?

- ▶ 1260
- ▶ 210
- ▶ 10C6 * 6!
- ▶ 10C5 * 6

Question No: 4 (Marks: 1) - Please choose one

If the equation of regression line is y = 5, then what result will you take out from it?

- ► The line passes through origin.
- ► The line passes through (5, 0)
- ► The line is parallel to y-axis.
- ► The line is parallel to x-axis

Question No: 5 (Marks: 1) - Please choose one

A number from 1 to 11 is chosen at random. What is the probability of choosing an odd number?

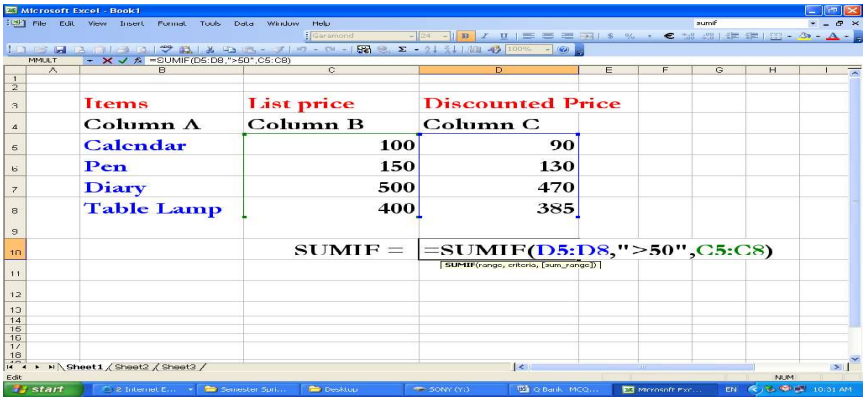
- ► 6/11
- ► 5/11
- ► 1/11
- ► 7/11

Question No: 6 (Marks: 1) - Please choose one

If sign of r is negative then it indicates

- ► Direct relationship between X & Y
- ► Indirect relationship between X & Y
- ► X & Y equal
- ► X & Y are square

Question No: 7 (Marks: 1) - Please choose one



In the above diagram, SUMIF adds the values of

- ▶ Column A
- ▶ Column B
- ▶ Column C
- ▶ None of the above.

Question No: 8 (Marks: 1) - Please choose one

Evaluate ${}^{n}C_{n}$

- ▶ n
- ▶ one
- ▶ Zero
- ▶ ${}^{n}P_{r}$

Question No: 9 (Marks: 1) - Please choose one

A pair of dice is rolled. What is the probability of getting a sum of 2?

► 1/3

► 1/6

► 1/36

► None of these

Question No: 10 (Marks: 1) - Please choose one

Twelve randomly-chosen students were asked how many times they had missed class during a certain semester, with this result: 2, 1, 5, 1, 1, 3, 4, 3, 1, 1, 5, 18. For this sample, the geometric mean is

► 2.376

► 2.158

► 1.545

► Impossible to calculate

Question No: 11 (Marks: 1) - Please choose one

The RSQ of any data is

► Square root of correlation coefficient.

► Square of correlation coefficient.

► Correlation coefficient.

► Slope of the data.

Question No: 12 (Marks: 1) - Please choose one

Find x if $3(x + 2) - 7 = 11$.

► 2

- -4
- 6
- 4

Question No: 13 (Marks: 1) - Please choose one

The speed of a moving car is 30 m/s. If the driver accelerates with a rate 5% per 10 seconds what will be its speed after 2 minutes?

- 42m/s
- 48m/s
- 56m/s
- 39m/s

Question No: 14 (Marks: 1) - Please choose one

The intercept of a line passing through origin is

- zero
- does not exists
- finite
- positive

Question No: 15 (Marks: 1) - Please choose one

The text concatenation operator is used to

- include ":" and ","
- calculate exponentiation: ^
- combine two text strings
- make comparisons.

Question No: 16 (Marks: 1) - Please choose one

Percent. Symbol: % is Excel arithmetic operator.

- ► True
- ► False

Question No: 17 (Marks: 1) - Please choose one

The Break Even Point in units is 64 and Production Capacity = 320 units per period, then The break Even point as a % of capacity will be

- ► 35%
- ► 30%
- ► 25%
- ► 20%

Question No: 18 (Marks: 1) - Please choose one

The choice of one tailed test and two tailed test depends upon

- ► alternative hypothesis
- ► null hypothesis
- ► composite hypothesis
- ► level of significance

Question No: 19 (Marks: 1) - Please choose one

The graph of the normal distribution depends on ----------

- ▶ Harmonic mean
- ▶ Standard Deviation only
- ▶ Harmonic Mean and Standard Deviation
- ▶ Mean and Standard Deviation

Question No: 20 (Marks: 1) - Please choose one

In case of a positive linear relationship ,the correlation of coefficient r lies

- ▶ Between 0 and 1
- ▶ Between -1 and 1
- ▶ Between 0 and -1
- ▶ None of these

Question No: 21 (Marks: 2)

Define Seasonal Variation.

Question No: 22 (Marks: 2)

Find the value of $z_{\frac{\alpha}{2}}$, where 95% confidence interval is given.

Question No: 23 (Marks: 2)

Define frequency with example

Question No: 24 (Marks: 3)

How many 5-digit numbers can you make of those digits, in which the first digit is not 0?

Question No: 25 (Marks: 3)

Write the components of Linear model.

Question No: 26 (Marks: 3)

What is a central tendency? Write any three of its types.

Question No: 27 (Marks: 5)

A student has gotten the following grades on his tests: 87, 95, 76, and 88. He wants an 85 or better overall. What is the minimum grade he must get on the last test in order to achieve that average?

Question No: 28 (Marks: 5)

A card is drawn at random from a deck of cards. Find the probability of getting a queen.

Question No: 29 (Marks: 5)

Suppose scores on an IQ test are normally distributed. If the test has a mean of 100 and a standard deviation of 10, what is the probability that a person who takes the test will score less than 110?

(Use the following chart:

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936

Question No: 30 (Marks: 10)

Find the median, lower quartile, upper quartile and interquartile range of the following data set of scores:

18 20 23 20 23 27 24 23 29

Question No: 31 (Marks: 10)

Minimize $C = 3x + 4y$ subject to the constraints

$3x - 4y \leq 12,$
$x + 2y \geq 4$
$x \geq 1, \quad y \geq 0.$