Reg. No. : ....

Name : ....

II Semester B.B.A./B.B.A. (RTM) Degree (CBCSS – OBE – Regular/ Supplementary/Improvement) Examination, April 2023
(2019 Admission Onwards)
COMPLEMENTARY ELECTIVE COURSE
2C03BBA/BBA(RTM) : Quantitative Techniques for Business Decisions

Time : 3 Hours

Max. Marks : 40

SECTION – A

Answer **all** questions. **Each** question carries **1** mark.

1. What are quantitative techniques ?
2. What are mutually exclusive events ?
3. What is a random experiment ?
4. What is a binomial distribution ?
5. What is the level of significance ?
6. What are parametric tests ?

(6×1=6)

SECTION – B

Answer **any six** questions. **Each** question carries **2** marks.

7. A book contains 100 misprints distributed randomly throughout its 100 pages. What is the probability that a page observed at random contains at least two misprints ? Assume poisson distribution.

8. What are independent and dependent events ?

9. Two players Sangeetha and Haritha play a tennis match. It is known that the probability of Sangeetha winning the match is 0.6. What is the probability of Haritha winning the match ?

10. What is the Bayes Theorem ?

11. Find the mean and standard deviation of the following distribution
    $n = 16, p = 0.40$.

12. What is the normal approximation to binomial distribution ?

13. State any two properties of a standard normal curve.

14. Distinguish between one tailed and two tailed test.

(6×2=12)

P.T.O.

K23U 1943

SECTION – C

Answer **any four** questions. **Each** question carries **3** marks.

15. State any three characteristics of a good hypothesis.

16. State any three characteristics of a poisson distribution.

17. A glass jar contains 6 red, 5 green and 8 blue balls. If a single ball is chosen at random from the jar, what is the probability of choosing 1.a red ball 2.a green ball 3.a blue ball ?

18. A dresser drawer contains five pairs of socks each with one of the following colours : blue, brown, red, white and black. Each pair is folded together in a matching set. You reach into the sock drawer and choose a pair of socks without looking. Now, you replace this pair with another pair. What is the probability that you will choose the red pair of socks both times ?

19. A student secures 72 marks in an examination in sociology for which class average is 54 the standard deviation is 20. He secure 76 marks in statistics for which his class average is 52 and the standard deviation is 12. What can you about the performance of this student with reference to those two examinations ?. (Convert z scores or standard scores for both examinations and make your inferences).

20. State any three points of differences between null and alternative hypothesis.

$$(4×3=12)$$

SECTION – D

Answer **any two** questions. **Each** question carries **5** marks.

21. Discuss the role of quantitative techniques in business.

22. A class consists of 100 students, 25 of them are girls and 75 boys, 20 of them are rich and remaining poor, 40 of them are fair complexioned. What is the probability of selecting a fair complexioned rich girl ?

23.

x	0	1	2.	3	4
f	123	59	14	3	1

Fit a poisson distribution to the above data.

24. Explain the steps in the testing of a hypothesis.

$$(2×5=10)$$

K22U 1243

Reg. No. : ....

Name : ....

II Semester B.B.A./B.B.A.(RTM) Degree (C.B.C.S.S. – O.B.E. – Regular/ Supplementary/Improvement) Examination, April 2022
(2019 Admission Onwards)
Complementary Elective Course
2C03BBA/BBA(RTM) : QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

Time : 3 Hours

Max. Marks : 40

SECTION – A

Answer **all** questions. **Each** question carries **1** mark.

1. What do you mean by exhaustive events ?

2. What do you mean by inverse probability ?

3. What are the important properties of a probability distribution ?

4. If mean and variance of a binomial distribution are 4 and 2 respectively, find the parameter "n".

5. What do you mean by Points of inflexion ?

6. What is meant by level of significance ? (6×1=6)

SECTION – B

Answer **any six** questions. **Each** question carries **2** marks.

7. What do you mean by quantitative technique ?

8. Mention any four important functions of quantitative techniques.

9. Explain classical definition of probability with example.

10. Explain addition theorem of probability.

11. An unbiased coin is tossed 4 times. What is the probability of getting 2 heads ?

12. Write down any four properties of Poisson Distribution.

13. What do you mean by Type I and Type II errors ?

14. What are the important assumptions in Non-parametric tests ? (6×2=12)

K22U 1243

SECTION – C

Answer **any four** questions. **Each** question carries **3** marks.

15. Explain the uses of quantitative techniques in business.

16. The odds in favour of Arun solving a problem in Management Accounting is 14 to 16 and the odds against Bipin solving the same problem are 8 to 6. What is the probability that (a) problem is solved and (b) problem is not solved ?

17. What are the important limitations of quantitative techniques ?

18. A company manufactures certain type of products using 3 types of machines. The figures of daily production are : Machine A – 3000 Units, Machine B – 2500 Units and Machine C – 4500 Units. Past experience shows that 1%, 1.2% and 2% of the output produced respectively by Machine A, Machine B and Machine C are defective. One unit of output is drawn randomly from a day's production and is found to be defective. What is the probability that it is manufactured by (1) Machine A, (2) Machine B, (3) Machine C ?

19. The income of a group of 10,000 persons were found to be normally distributed with mean Rs. 520 and S.D. Rs. 60. Find the lowest income of the richest 500.

20. A sample of 1000 students from a district was taken and their average weight was found to be 112 pounds with a S.D. of 20 pounds. Test whether mean weight of students in the district is 120 pounds at 0.95 level of confidence.

(4×3=12)

SECTION – D

Answer **any two** questions. **Each** question carries **5** marks.

21. A sister and brother appear in an interview for two vacancies in the same post. The probability of brother's selection is 1/7 and that of sister's selection is 1/5. What is the probability that (a) both of them will be selected, (b) only brother will be selected, (c) only one of them will be selected, (d) none of them will be selected ?

22. The products produced by a company were checked by examining samples. The defectives are found as shown below :

No. of defectives	0	1	2	3	4	5	6	7
No. of samples	7	6	19	35	30	23	7	1

Fit a binomial distribution.

23. What is Normal Distribution ? What are its properties ?

24. A company produces insulated washers for electric devices of average thickness of 0.25 cm. A random sample of 10 insulated washers was to have an average thickness of 0.24 cm, with a standard deviation of 0.02 cm. Test the significance of the deviation at 5% level of significance.

(2×5=10)

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K21U 3440

Reg. No. : ....

Name : ....

II Semester B.B.A./B.B.A.(R.T.M.) Degree (CBCSS – OBE – Reg./Sup./Imp.)
Examination, April 2021
(2019 Admission Onwards)
Complementary Elective Course
2C03BBA/BBA(RTM) : QUANTITATIVE TECHNIQUES FOR
BUSINESS DECISIONS

Time : 3 Hours　　　　　　　　　　　　　　　　　　　　Max. Marks : 40

PART – A

Answer **all** questions. **Each** question carries **1** mark.　　　　　**(6×1=6)**

1. What is mutually exclusive event ?

2. State the meaning of permutation and combination.

3. What do you mean by normal distribution ?

4. State any two characteristics of binomial distribution.

5. What is random variable ?

6. What is standard error ?

PART – B

Answer **any 6** questions. **Each** question carries **2** marks.　　　　**(6×2=12)**

7. State the scope of Quantitative Techniques.

8. What is inverse probability ?

9. Explain addition and multiplication theorem of probability.

10. State the properties of Poisson distribution.

11. State the merits of normal distribution.

12. If X follows Poisson distribution such that $P(X = 1) = P(X = 2)$, find $P(X = 4)$ ($e^2 = 0.1353$). Also find mode of the distribution.

13. What is meant by level of significance ?

14. State the meaning of parametric and non-parametric tests.

P.T.O.

PART – C

Answer **any 4** questions. **Each** question carries **3** marks.   **(4×3=12)**

15. Explain the statistical tools of Quantitative Techniques.

16. What are the different approaches to probability ?

17. Discuss the assumptions of Chi-square test.

18. The odds against X solving a Business Statistics problem are 8 to 6 and odds in favour of student Y solving the same problem are 14 to 16. What is the probability that ;

    1) Problem is solved   2) Problem is not solved.

19. Out of 500 items selected for inspection 0.2% are found to be effective. Find how many lots will contain exactly no defective if there are 1000 lots using poisson distribution.

20. In a multiple choice quiz each question has 5 alternatives, out of them only one answer is correct. What is the probability of 6 correct answers out of 10 questions ?

PART – D

Answer **any 2** questions. **Each** question carries **5** marks.   **(2×5=10)**

21. What are the different classifications of Quantitative Techniques ?

22. What do you mean by testing of hypotheses ? Explain the various types of hypotheses.

23. A bag contains 8 balls, identical except for colour of which 5 are red and 3 white. A man draws two balls at random one after another without replacement. What is the probability that one of the balls drawn is white and other red ?

24. Fit a normal distribution to the following data.

Class	12-15	16-19	20-23	24-27	28-31	32-35	36-39
Frequency	6	10	22	25	20	12	9

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Reg. No. : ....

Name : ....

II Semester B.B.A./B.B.A. (R.T.M.) Degree (CBCSS (OBE) – Regular)
Examination, April 2020
(2019 Admission)
Complementary Elective Course
2C03BBA/BBA(RTM) : QUANTITATIVE TECHNIQUES FOR BUSINESS
DECISIONS

Time : 3 Hours
Max. Marks : 40

PART – A

Answer **all** questions. **Each** question carries **1** mark.

1. What is random experiment ?

2. Define probability.

3. State any two characteristics of binomial distribution.

4. What is standard normal variate ?

5. State the meaning of Poisson distribution.

6. State any two types of hypotheses.
(6×1=6)

PART – B

Answer **any 6** questions. **Each** question carries **2** marks.

7. State the various approaches to probability.

8. Discuss permutation and combination.

9. What are the characteristics of Poisson distribution ?

10. Narrate the properties of normal distribution.

11. The probability that a batsman scores a century in a cricket match is 1/3. What
is the probability that out of 5 matches, he may score century in :
1) Exactly 2 matches, and
2) No match.

12. Explain central limit theorem.

13. Discuss the procedure for testing hypotheses.

14. State any four techniques of Operations Research.
(6×2=12)

P.T.O.

PART – C

Answer **any 4** questions. **Each** question carries **3** marks.

15. What are the limitations of Quantitative Techniques ?

16. Explain the various theorems of probability.

17. A University has to select an examiner from a list of 50 persons. 20 of them are women and 30 men. 10 of them know Hindi and 40 do not, 15 of them are teachers and remaining are not. What is the probability of the University selecting a Hindi knowing women teacher ?

18. A and B play a game in which A's chance of winning is 2/3. In a series of 8 games what is the probability that A will win 6 or more games ?

19. In a competitive examination, 5000 students have appeared for a paper in Statistics. Their average mark was 62 and standard deviation was 12. If there are only 100 vacancies, find the minimum marks that one should score in order to get selected.

20. Explain Two Tailed and One Tailed Tests.   (4×3=12)

PART – D

Answer **any 2** questions. **Each** question carries **5** marks.

21. Define Quantitative Technique. Discuss the uses of QT in business.

22. What is Chi-square test ? Explain its characteristics and uses.

23. An urn 'A' contains 2 white and 4 black balls. Another urn 'B' contains 5 white and 7 black ball. A ball is transferred from the urn 'A' to urn 'B'. Then a ball is drawn from urn 'B'. Find the probability that it will be white.

24. Fit a Poisson distribution to the following data and calculate the theoretical frequencies.

x :	0	1	2	3	4
f :	123	59	14	3	1

(2×5=10)

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