Reg. No.: ☐☐☐☐☐☐☐☐☐

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.
(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.Sc., MATHEMATICS

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
II	PART-IV	SEC - 5	U23MA4S5	MATHEMATICAL FOR COMPETITIVE EXAM

Date & Session: 06.05.2025/AN   **Time : 2 hours**   **Maximum: 50 Marks**

Bloom's K-level	Q. No.	SECTION – A (5 X 10= 50 Marks) Answer ALL Questions choosing either (a) or (b).
K3	1	Answer the questions given below it: 　i) Arun said, "This girl is the wife of the grandson of my mother." Who is Arun to the girl? 　ii) P is brother of Q and R. S is R's mother. T is P's father. Which of the following statements cannot be definitely true? 　iii) Deepak is brother of Ravi. Rekha is sister of Atul. Ravi is son of Rekha. How is Deepak related to Rekha? 　iv) Pointing to a man, a woman said, "His mother is the only daughter of my mother." How is the women related to the man? 　v) A and B are married couple. X and Y are brothers. X is the brother of A. How is Y related to B? **(OR)** Study the following information carefully and answer the questions given below it: 　There are six persons A,B,C,D,E and F. C is the sister of F. B is the brother of E's husband. D is the father of A and grandfather of F. There are two fathers, three brothers and a mother in the group 　1. Who is the mother? 　2. Who is E's husband? 　3. How many male members are there in the group? 　4. How is F related to E? 　5. Which of the following is a group of brothers?
K3	2.	1. If HEATER is written as KBDQHO, how will you encode COOLER? 2. If in a certain language FASHIOM is coded as FOIHSAN, how is PROBLEM coded in that code? 3. In a certain code, 3456 is coded as ROPE,15526 is coded as APPLE, then how is 54613 coded? 4. In a certain code, 2 is code as P, 3 as N,9 as Q, 5 as R, 4 as A and 6 as B. How is 599423 coded in that code? 5. If in a certain language , GAMBLE is coded as FBLCKF, how is flower coded in that coded? **(OR)** 1. If rain is water, water is road, road is cloud, cloud is sky, sky is sea and sea is path, where do aeroplanes fly? 2. If train is called bus, bus is called tractor, tractor is called car, car is called scooter, scooter is called bicycle, bicycle is called moped, which is used to plough a field? 3. In a certain code language , 'Tom Kun Sud ' means ' Dogs are

		barking'; 'Kun Jo Mop' means 'Dogs and horses' and 'Mut Tom Ko' means ' Donkeys are mad'. Which word in that language means 'barking'?
		4. If 'ski rps tri' stands for 'nice Sunday morning'; the sti rps' stands for 'every Tuesday morning' and 'ski ptr qlm' stands for 'nice market place', what would 'Sunday' stand for ?
		5. In a certain code , 'bi nie pie' means 'some good jokes', 'nie bailik' means ' some real stories', nd 'pie lik tol'means 'many good stories'. Which word in that code means 'jokes'?
K4	**3.**	1. There are five different houses A to E in a row. A is the right of B and E is to the left of C and right of A. B is to the right of D. Which of the houses is in the middle?
		2. In a cricket reason, India defeated Australia twice. West Indies defeated India twice, Australia defeated West Indies twice, India defeated New Zealand twice and West Indies defeated New Zealand twice. Which country has lost most number of times?
		3. Five girls are sitting in row. Rashi is not adjacent to Sulekha or Abha. Anuradha is not adjacent to Sulekha. Rashi is adjacent to Monika. Monika is at the middle in the row. Then, anuradha is adjacent to whom out of the following?
		4. In a school, there were five teacher. A and B were teaching Hindi and English. C and B were teaching English and Geography. D and A were teaching Mathematics and Hindi. E and B were teaching History and French.
		a) Who among the teacher was teaching maximum number of subjects?
		b) Which of the following pairs was teaching both Geography and Hindi?
		(OR)
		There are five persons P,Q, R,S and T. One is football player, one is chess player and one is hockey player, P and S are unmarried ladies and do not participate in any game. None of the ladies plays chess or football. There is a married couple in which T is the husband. Q is the brother of R and is neither a chess player nor a hockey player.
		i) Who is the football player?
		ii) Who is the hockey player?
		iii) Who is the chess player?
		iv) Who is the wife of T?
		v) Write the three ladies are there?
K5	**4.**	In each question below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusion and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.
		Give answer
		a) If and only conclusion I follows
		b) If only conclusion II follows
		c) If either I or II follows
		d) If neither I nor II follows and
		e) If both I and II follows
		Statements: Sohan is a good sportsman
		Sportsman are healthy.
		Conclusion: I . All healthy persons are sportsman.
		II. Sohan is healthy.
		Statements: Some paper are files.

Some files are pens.

Conclusion: I . Some files are not pens.

           II. Some pens are papers.

Statements: All men are married

               Some men are educated.

Conclusion: I . Some married are educated.

           II. Some educated are married.

Statements: Some players are singers.

                All singers are tall.

Conclusion: I .Some players are tall.

           II. All players are tall.

Statements: All bags are cakes.

              All lamps are cakes.

Conclusion: I. Some lamps are bags

           II. No lamp is bag

(OR)

Each of the following questions is followed by two arguments numbered I and II. You are to decide which one is strong and which is weak. Give the answer:

    a) If and only argument I is strong;
    b) If only argument II is strong;
    c) If either I or II strong;
    d) If neither I nor II is strong and
    e) If both I and II are strong

Statements: Should school education be made free in India?

Arguments: I. Yes. This is the only way to improve the level of literacy.

             II. No. It would add to the already heavy burden on the exchequer.

Statements: Is unemployment allowance justified?

Arguments: I. Yes. It provides financial aid to the unemployed.

             II. No. It might promote idleness among the unemployed youth.

Statements: Is buying things on instalments profitable to the customer?

Arguments: I. Yes. He has to pay less

             II. No. Paying instalments upsets the family budget.

Statements: Should luxury hotels be banned in India?

Arguments: I. Yes. There are places from where international criminals operate.

             II. No. Affluent foreign tourists will have no place to stay.

Statements: Should telecasting feature films be stopped?

Arguments: I. Yes. Young children are misguided by the feature films.

            II. No. This is the only way to educated the masses.

K5	5.	Read the following passage and examine each inference given below in the context of this passage.
		Write your answer as
		  a) If the inference is 'definitely true';
		  b) If the inference is 'probably true';
		  c) If the 'data provided is inadequate';
		  d) If the inference is 'probably false'; and
		  e) If the inference is 'definitely false'.
		Though the state cultivates only 3.2 lakh tonnes of mangoes, they are of premium quality and with mangoes becoming second most consumed fruit in the world after grapes, the government has been trying exporting it though sea route which is cheaper. An experiment which was done in this regard last year has proved successful.
		  i) Quality of mangoes is an improvement factor in exports.

ii)   The state also exports good quality grapes.

iii)   There are some problems in exporting mangoes through sea route.

iv)   Most of the other exports are through sea routes which is cheaper.

The state also cultivates a large number of medium quality of mangoes.

(OR)

i) Technological innovations have revolutionized communication, making information more accessible than ever before. What is the central theme?

    a) Technology has no impact on communication.

    b) Access to information has decreased over time.

    c) Innovations in technology have enhanced information accessibility.

    d) Communication methods have remained unchanged.

ii) Regular physical exercise contributes significantly to mental well-being and overall health. Which statement aligns with the main idea?

    a) Exercise is only beneficial for physical health.

    b) Mental health is unrelated to physical activity.

    c) Physical activity enhances both mental and physical health.

    d) Only intense workouts improve mental well-being.

iii) Sustainable development requires balancing economic growth with environmental preservation for future generations. What is the key take away from this statement?

    a) Economic growth should be prioritized over the environment.

    b) Environmental concerns hinder development.

    c) Development should integrate economic and environmental considerations.

    d) Future generations are responsible for their own environment.

iv) A country's economic progress should not be measured solely by its export and import figures but by the improved living standards of its average citizens. Which of the following statements best reflects the central theme of the passage?

    a) High exports indicate a strong economy.

    b) Trade balances are the sole indicators of prosperity.

    c) Citizens' well-being is a true measure of economic success.

    d) Import restrictions lead to economic growth.

v) Access to quality education is a fundamental right that empowers individuals and promotes societal progress. Which statement best encapsulates the theme?

Education is a privilege for the few.

    a) Society does not benefit from widespread education.

    b) Quality education should be accessible to all.

    c) Individual empowerment is unrelated to education.