THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

Re-accredited (2nd Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale

Backlog Arrear Examination, March 2021

MAT/MAS – 1232 – MATHEMATICAL REASONING

Max : 60 Marks   Time : 3 Hour

Answer Any FOUR Questions (4 × 15 = 60 Marks)

1)   **(i) Read the following information and answer the question given below**

   Prashant Arora has three chidren –Sangeeta, Vimal and Ashish. Ashish married Monika, eldest daughter of Mr and Mrs Roy. The Roys married their youngest daughter to the eldest son of Mr and Mrs Sharma, and they had two children named Amit and Shashi. The Roys have two more children, Roshan and Vandana, both elder to veena. Sameer and Ajay are sons of Ashish and monika. Rashmi is the daughter of Amit.

1. What is the surname of Rashmi?

2. How is sameer related to monika's father?

3. What is the surname of Sameer?

4. How is Mrs Roy related to Ashish?

(ii) **Read the following information carefully and answer the question given below.**
   (A) 'A$B' means   'A is mother of B';
   (B)'A# B' means 'A is father of B';
   (C) 'A @ B' means 'A is husband of B';
   (D) 'A % B' means 'A is daughter of B';

5. P@ Q$ M# T indicates what relationship of P with T?
   (a) Paternal grandmother   (b) maternal grand mother
   (c) Paternal grand father   (d) maternal grand father

6.. Which of the following expressions indicates 'R is the sister of H'?
   (a) H$D@F#R   (b) R%D@F$H
   (c) R$D@F#H   (d) H%D@F$R

7. If F@D%K#H, then how is F relate to H?
    (a) brother-in-law   (b) sister
    (c) sister-in-law   (d) none

8.Which of the following expressions indicates 'H is the brother of N'?
   (a) H#RDN   (b) N%F@D$H#R
   (c) N%F@D$H   (d) N%F@D%H

9. If G$M@K how is K related to G?

(a) daughter-in-law   (b) mother-in-law
(c) daughter   (d) aunty

2)   **In column I below are given some words and in column II are given their equivalents in code-language. Neither the codes nor the letters in columnII are given in the same order as the words are their spellings in column I. Study the two columns carefully and identify the code-equivalents of the letter given in each question.**

Column I	Column II
HEAD	hlonqsx
ROUTINE	dhpqrs
ENOUGH	efnqr
GHOST	efhnox
MASTER	adeh
NOSE	hnor

   (i) D   (ii) E   (iii) G   (iv) I   (v) M   (vi) O   (vii) R   (viii) S   (ix) T   (x) U

3)   **(A) Study the following information carefully and answer the given questions :**

   (i)   B and E are good in Dramatics and Computer Science.
   (ii)   A and B are good in Computer Science and Physics.
   (iii)   A, D and C are good in Physics and History.
   (iv) C and A are good in Physics and Mathematics.
   (v) D and E are good in History and Dramatics.

   1.   Who is good in Physics, History and Dramatics ?
   2.   Who is good in Physics, History and Mathematics, but not in Computer Science ?
   3.   Who is good in Computer Science, History and Dramatics ?
   4.   Who is good in History, Physics, Computer Science and Mathematics ?
   5.   Who is good in Physics, Dramatics arid Computer Science ?

(B)Find the correct alternative for the following words

Matrix I

	0	1	2	3	4
0	F	O	M	S	R
1	S	R	F	O	M
2	O	M	S	R	F
3	R	F	O	M	S
4	M	S	R	F	O

Matrix II

	5	6	7	8	9
5	A	T	D	I	P
6	I	P	A	T	D
7	T	D	I	P	A
8	P	A	T	D	I
9	D	I	P	A	T

   (i). MOST
        (A)40, 44, 22, 89   (B)14, 76, 77, 76   (C)14, 32, 66, 67   (D) 02, 13, 34, 56
   (ii). ROAD
        (A)42, 32,79,58   (B)23, 32, 98, 99   (C) 11, 13, 67, 69   (D) 20,40,68,65
   (iii). STOP
        (A)10, 56, 44, 97   (B)41, 68, 01, 77   (C))12, 10, 13, 67   (D)22, 75, 32, 86

(iv). FOAM

    (A)24, 01, 55, 22   (B)00, 01, 67, 33   (C)12, 13, 67, 23   (D)43, 85, 34, 93

(v). STORM

    a) 41, 68, 20, 04,33 b)10, 55, 76, 79,98 c)03, 75, 68, 59,76 d)34, 87, 44, 30,24

4)   **Read the conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts. Give answer (A) if only conclusion I follows   (B) if only conclusion II follows   (C) if neither I nor II follows and   (D) if both I and II follow.**

(i) Statement : All hen are dogs.   All dogs are cats.

    Conclusions: I. All hen are cats.

                II. All cats are hen.

(ii). Statement : All bikes are cats. All fans are cats.

    Conclusions: I. All bikes are fans.

              II. Some fans are bikes.

(iii). Statement : All pencils are roads. All roads are houses.

    Conclusions: I. All houses are pencils.

              II. Some houses are pencils.

(iv). Statements : All flowers are stems. All stems are roots.

    Conclusions : I. All roots are flowers.

              II. All stems are flowers.

(v). Statements : All apples are oranges. Some oranges are papayas.

    Conclusions : I. Some apples are papayas.

              II. Some papayas are apples

5)   **(i) The number-group in each question below is to be codified according to the following letter codes:**

Number	5	1	3	0	2	4	8	7	6	9
Letter code	L	X	M	D	P	B	E	K	F	J

(1) 901273

(A) JDXPKM   (B) JDPLFM   (C) JDXLMF   (D) none of these

(2) 430675

(A) BMKPFX   (B) BMDFKL   (C)BMDKXF   (D) BMPFKX

(3) 790853

(A) KJDELM   (B) FJPEXM   (C) EJPEMX   (D) FPJEMX

(4) 173846

(A) LFMXKM   (B) XKMEBK   (C)XKMEBF   (D) LFEMBK

(5) 862941

(A) EFPBJL   (B) EFDJLB   (C) EKJDBL   (D) EFPJBX

(ii) Decode the following codes

6. In a certain code, BASIC is written as DDULE. How is LEADER written in that code?

a. NGCFGT   (b) NHCGGU   (c) OGDFHT   (d) OHDGHU

7. In a certain language, SIGHT is written as FVTUG. How is REVEAL written in the same language ?

  (a) YNRIRE   (b) DQHQMX   (c) FSJSOZ   (d) ERIRNY

8. If in a certain language, MIRACLE is coded as NKUEHRL, then how is GAMBLE coded in that language ?

  (a) JDOCMF   (b) CLEMNK   (c) HCPFQK   (d) AELGMN

9. If in a certain code, GLAMOUR is written as IJCNMWP and MISRULE is written OGUSSNC, then how will TOPICAL be written in that code?

(a) VMRJECN (b) VMRHACJ (c) VMRJACJ (d) VNRJABJ (e) Noneofthese

10. In a certain code, BELIEF is written as AFKKDI. How is SELDOM written in that

  (a) RDKCNL   (b) RFKENM   (c) RFKFNP   (d) TFKENP   (e) None of these

6)   **Read the following information and answer the question given below**

Six lectures A. B, C, D, E and F are to be organised in a span of seven days— from Sunday to Saturday, only one lecture on each day in accordance with the following :

 (i)   A should not be organised on Thursday. ,
 (ii)   C should be organised immediately after F.
 (iii) There should be a gap of two days between E and D.

 (iv) One day there will be no lecture (Friday; is not that day), just before that day D will be organised.
 (v)   B should be organised on Tuesday and should not be followed by D.

(1). On which day- there is no lecture?

(2). How many lectures are organised between C and D ?

(3). Which day will the lecture F be organised ?

(4). Which of the following is the last lecture in the series ?
  (A) A   (B) B   (C) C   (D) Cannot be determined

(5). Which of the following information is not required in finding the complete sequence of organisation of lectures ?

  (A) I only   (B) II & V only   (C) I & II only   (D) All are required.