Total No. of printed pages = 3

2021

(held in 2022)

MATHEMATICS

(Theory Paper)

Paper Code : MAT-106 (OE)

Open Elective - I (Fundamental of Mathematics)

Full Marks – 50

Time – Two hours

The figures in the margin indicate full marks for the questions.

1. Answer the following questions :

(a) "A collection of well defined objects is called set". Explain with example. 5

(b) Define natural and whole number. Give examples. Is any whole number natural number ? 5

(c) Define real, prime and composite number. Give examples. Zero is not an odd number. — Justify. 3+1=4

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(d) Define relation and function. Give example. "Every relation is not a function". – Justify. $3+3=6$

(e) What is data ? What are the types of data ? Define with examples. $1+4=5$

2. Answer any *five* from the following questions : $5 \times 5=25$

(a) Define sequence and series. Give example. Write one arithmetic and geometric series. $3+2=5$

(b) Define with examples union and intersection of two sets. What do you mean by 'disjoint sets'? $4+1=5$

(c) Write about primary and secondary data. 5

(d) What is tabulation ? Write four advantages of tabulation. $1+4=5$

(e) What is sampling ? What are the types of sampling ? Write two objectives of sampling. $1+2+2=5$

(f) Define injective and surjective function. Give example. When a function becomes bijective ? $4+1=5$

(g) Define universal set and complement of a set. Let U be the universal set of a set A, then find : $2+3=5$

(i) U^c

(ii) $U-A$ and

(iii) $A-U$.