Roll No: | | | | | | | | | | | | |

MCA
(SEM I) THEORY EXAMINATION 2021-22
FUNDAMENTAL OF COMPUTERS & EMERGING TECHNOLOGIES

Time: 3 Hours   *Total Marks: 100*

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   **2 x 10 = 20**

Q no.	Question	Marks	CO
a.	Which is the fastest memory unit?	2	1
b.	Write an algorithm to check whether a given number is even or odd.	2	1
c.	Give the advantages of Graphical User Interface (GUI).	2	2
d.	Discuss some differences between LANs and WANs.	2	2
e.	Discuss crawling, indexing, and ranking in context to search engines.	2	3
f.	In what ways is IoT energy efficient?	2	3
g.	Name the two types of records that are present in the blockchain database.	2	4
h.	Summarize the applications of cloud computing.	2	4
i.	Define big data analytics.	2	5
j.	Compare quantum computing with classical computing.	2	5

SECTION B

2. **Attempt any *three* of the following:**   **10x3=30**

Q no.	Question	Marks	CO
a.	Build a flowchart to calculate the factorial of a number.	10	1
b.	What are the advantages of a Mesh topology?	10	2
c.	Summarize the applications of Industrial Internet of Things (IIoT).	10	3
d.	Explain the architecture of Amazon Web Services (AWS).	10	4
e.	How can augmented reality be used in everyday life? Summarize.	10	5

SECTION C

3. **Attempt any *one* part of the following:**   **10x1=10**

Q no.	Question	Marks	CO
a.	What do you mean by memory? Classify memory hierarchy in terms of speed, size and cost.	10	1
b.	Outline the difference between application software and system software. Give examples.	10	1

4. **Attempt any *one* part of the following:**   **10x1=10**

Q no.	Question	Marks	CO
a.	What is the role of an operating system in resource allocation? Explain how hard real time operating systems are different from soft real time operating systems?	10	2
b.	What is meant by Data Communication? Explain its characteristics.	10	2

5. **Attempt any *one* part of the following:**   **10x1=10**

Q no.	Question	Marks	CO
a.	What are the elements of Internet architecture? Summarize.	10	3
b.	On what basis can a city be called a smart city? Illustrate the role of technology for making a city to be a smart city.	10	3

6. **Attempt any *one* part of the following:**   **10x1=10**

Q no.	Question	Marks	CO
a.	Demonstrate the difference between SaaS, PaaS and IaaS related to cloud computing?	10	4
b.	What is blockchain? How is the blockchain created? Explain the use of the Genesis block.	10	4

7. **Attempt any *one* part of the following:**   **10x1=10**

Q no.	Question	Marks	CO
a.	Explain the architecture of Brain Computer Interface. Give its applications.	10	5
b.	Explain the terms recycling and reusing in context to green computing? Explain in detail.	10	5