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SECOND YEAR (Computer Science)
COURSE CODE: COM-24104 COURSE NAME: COMPUTER ARCHITECTURE
(Semester IV)

Program: B.Sc. Com05
Program Specific: B.Sc. (Computer Science)
Course Type: Major Specific IKS
Paper: COM-24104

Credits: 2
Time: 2 Hours
Max. Marks: 30
SET: A

Instructions to the candidate:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Draw a well labelled diagram wherever necessary.

Q1) Answer the following

[5 X 1= 5]

- a) Write excess three code of decimal number 5.
- b) State true/false: Charles Babbage first described Analytical Engine which is accepted as the first design for a modern computer.
- c) Who has invented the idea of assigning combination of 0s and 1s to represent various numbers in the same way used in today's computers?
- d) What is microprocessor?
- e) State true/false: Sanskrit language is most suitable for computer science and AI.

Q2) Answer the following (Attempt any 5/7)

[5 X 2 =10]

- a) Name the parameters affecting the computer system performance.
- b) What do you mean by computer architecture?
- c) Write name of computer components.
- d) Convert decimal number 47 into its binary equivalent.
- e) Convert hexadecimal number FF into its decimal equivalent.
- f) Write function of an address bus and data bus.
- g) Which architecture is used in embedded computing systems such as DSP?

Q3) Answer the following/Write short notes on following (Attempt any 2/4)

[2 X 5 = 10]

- a) Differentiate between Von Neumann and Harvard Architecture.
- b) Solve $(101 * 1101010)$.
- c) Subtract 1100 from 1111 using 2's complement method.
- d) Draw circuit diagram of Parity Generator using XOR gates.

Q4) Answer the following (Attempt any 1/2)

[5 X 1 = 5]

- a) Convert decimal number 25 into its equivalent binary no according to Pingala's method and also according to modern binary number system.
- b) Draw the block diagram of Harvard Architecture?
