

2021
COMPUTER SCIENCE
[HONOURS]
Paper : VIII

Full Marks : 80

Time : 4 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***GROUP-A**

1. Answer any **seven** questions: 1×7=7
- a) What is DMA operation?
 - b) State whether address bus is always unidirectional or bidirectional.
 - c) How many bits wide memory address have to be if the computer had 16 MB of memory? (use the smallest value possible)
 - d) What is Internet?
 - e) What is ARQ in networking?
 - f) What do you mean by scan conversion?
 - g) What is frame buffer?
 - h) Define pixel.

[Turn over]

- i) Which type of memory is difficult to interface with processor?

GROUP-B

2. Answer any **six** questions: 2×6=12
- a) What is the role of ALU?
 - b) What is the difference between polling and interrupt?
 - c) What are the key components of data communication system?
 - d) What are the types of Internet access?
 - e) What is colour look up table?
 - f) What are the advantages of signed 2's complement number system?
 - g) What is meant by refreshing of the screen?
 - h) What is dynamic memory? Write down one application of it.

GROUP-C

3. Answer any **three** questions: 7×3=21
- a) Why does DMA have priority over the CPU when both request a memory transfer? Explain.
 - b) Explain the concept of Token Bus (IEEE 802.4).

- c) What is an error in communication? Explain the types of error.
- d) Differentiate between Random Scan and Raster Scan display.
- e) Explain the working principle of colour CRT monitor.
- f) Explain Booth's algorithm for multiplying binary integer in signed 2's complement representation.

GROUP-D

4. Answer any **four** questions: 10×4=40
- a) Explain the hardware implementation of logic micro operation for AND, OR, XOR and Complement logic gate.
 - b) Explain AM, FM, PM.
 - c) Explain the TCP/IP reference model with a neat diagram.
 - d) What is Transformation? What are the General Transformation Techniques?
 - e) Explain Boundary fill Algorithm.
 - f) Write short notes on IEEE 754 representation of floating point numbers.