WEST BENGAL STATE UNIVERSITY

B.Sc. Honours PART-III Examinations, 2018

COMPUTER SCIENCE-HONOURS

PAPER-CMSA-V

Time Allotted: 4 Hours | Full Marks: 100

The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.

Answer Question No. 1 and any *five* from the rest taking at least one from each group

1. Answer any ***ten*** questions from the following: 2×10 = 20

   (a) What is the function of W and Z registers in 8085 microprocessor?
   (b) What is the difference between JMP and CALL instruction in 8085?
   (c) What is a proxy server?
   (d) What is the advantage of using associative memory?
   (e) What is Implied addressing mode? Give example.
   (f) How does the size of cache block affect the hit ratio?
   (g) What is programmed IO?
   (h) What is the difference between hardware and software interrupt?
   (i) What is Composite Signal?
   (j) What is Baud Rate?
   (k) What do you mean by connectionless protocol? Give example.
   (l) Write down two responsibilities of network layer.
   (m) What do we need protocols and standards in computer networking?
   (n) What is meant by Loopback address?
   (o) What are cookies?
   (p) Write down two protocol used for Email Services.

Group-A

2. (a) Write an assembly language program in 8085 for multiplication of two 8-bit unsigned numbers. 8+8
   (b) Write an assembly language program to calculate the LCM of two numbers.

3. (a) Draw the timing diagram of LXI instruction and also discuss. 6
   (b) What is the function of ALE in 8085 microprocessor? 3

(c) Briefly discuss on the T-states of JMP instruction for successful and unsuccessful jump operations. 3

(d) Discuss on the different interrupts of 8085 microprocessor. 4

4. (a) What is BUS idle machine cycle? Explain with an instruction of 8085. 3

(b) Explain the working of SP and PC during a jump instruction in 8085. 4

(c) Explain the role of RIM in interrupt processing. 3

(d) Draw and explain the basic organization of a microprogrammed control unit. 6

5. (a) Compare direct mapping with associative mapping in cache memory. 4

(b) Explain Daisy Chaining. 4

(c) Compare memory mapped IO and peripheral mapped IO. 4

(d) Draw a schematic diagram for interfacing an external IO device to the microprocessor and memory using DMA. 4

Group-B

6. (a) Explain SNR and SNR_{db}. 4+2

If the power of a signal is 10 mW and power of the noise is 1 μW what are the values of SNR and SNR_{db}?

(b) Compare bandwidth in Hertz with bandwidth in Bits per seconds. 3

(c) Explain why a single frequency sine wave is not useful in data communication? 3

(d) Explain attenuation and distortion. 4

7. (a) What are the disadvantages of mesh and ring topology? Draw a hybrid topology with a ring backbone and three bus networks. 4+3

(b) Give the difference between Microwave and Infrared Transmission. 3

(c) Describe the various steps needed in creating a checksum with example. 6

8. (a) What are the difference between ISO-OSI model and TCP/IP model? 5

(b) Why transport layer is responsible for process-to-process delivery? 3

(c) What are the services of session layer in OSI model? 4

(d) What are the characteristics of Data Communication? 4

9. (a) Briefly describe cyclic redundancy cheek with example. 5

(b) What are the limitations of TCP/IP model? 5

(c) What is ARP and RARP? 3

(d) What are the services of Host-to-Network layer in TCP/IP? 3

Group-C

10.(a) What is the role of DNS resolver? What are the three different sections of domain name space? 2+2

(b) Define internet, intranet and extranet. 3

(c) Compare static and dynamic webpage with suitable example. 4

(d) If a DNS domain name is department.myuniv.edu, how many levels of hierarchy are involved? 2

(e) How a hypertext document is different than traditional text document? 3

11. Write short notes on any ***four*** from the following: 4×4

(a) Dial up Connection.

(b) POP3 protocol

(c) URL

(d) MIME

(e) IRC

(f) WAN.