CMPN / Sem-V [CBSGS] / T2825 / T0498 MICROPROCESSOR / MAY-2017

Q.P. Code : 581201

(3 Hours) **[Total Marks : ~~100~~ 80**

N.B. : (1) Question **No.1** is **compulsory**.
(2) Answer **any ~~four~~ 3** questions from **Q.No.2** to **Q.No.~~7~~ 6**.
(3) **Figures** to the **right** indicate **full marks**.
(4) Assume suitable **data** if **required**.

1. (a) What is memory segmentation? State advantages of memory segmentation. **5**
   (b) What is GDT? Explain structure of GDT. **5**
   (c) Explain integer pipeline of Pentium processor? **5**
   (d) Briefly explain string instructions of 8086. **5**

2. (a) Design 8086 based system for following requirements : **10**
      (i) Clock frequency 5 MHz
      (ii) 512 KB RAM using 32 KB x 8
      (iii) 256 KB ROM using 32 KB x 8
   (b) Draw and explain block diagram of 8253. **10**

3. (a) Explain DMA data transfer modes in brief. **10**
   (b) Explain, with neat diagram, address translation mechanism implemented on 80386DX. **10**

4. (a) Explain, with neat diagram, cache memory organization is supported by Pentium processor. **10**
   (b) Draw and explain block diagram of Pentium processor. **10**

5. (a) Draw and explain block diagram of SuperSparc processor. **10**
   (b) Explain interrupt structure of 8086. **10**

6. Write short note on :
   (a) Mixed language programming **5**
   (b) Virtual 86 mode of 80386DX **5**
   (c) Branch prediction logic **5**
   (d) Control registers of 80386DX **5**

TE/Sem-V - CMPN/ (CBSGS)

MAY-2017

Q.P. Code : 581301

(3 Hours) **[Total Marks : 80**

N.B. : (1) Question **No.1** is **compulsory**.
(2) Attempt **any Three** questions out of remaining questions.
(3) Make **suitable** assumptions whenever **necessary**.

1. (a) Enumerate the main responsibilities of the data link layer. **20**
(b) What are the different guided and unguided transmission media?
(c) Explain with examples the classification of IPV4 addresses.
(d) Compare and contrast a circuit switching and a packet switching network.

2. (a) Consider a message represented by the polynomial $M(x) = x^5 + x^4 + x$. Consider a generating polynomial $G(x) = x^3 + x^2 + 1$ (1101). Generate a 3 bit CRC and show what will be the transmitted frame. How is error detected by CRC? **10**
(b) What is ISO-OSI reference model? Compare it with TCP/IP reference model. Which layer is used for the following : **10**
(i) to route packets
(ii) to convert packets to frame
(iii) to detect and correct errors
(iv) to run services like FTP, Telnet etc.

3. (a) Explain Distance Vector Routing. What are its limitations and how are they overcome? **10**
(b) What are Congestion Prevention Policies? Explain Congestion control in Vitiual Circuit and Datagram Subnets. **10**

4. (a) With the help of suitable example explain sliding window protocol with selective reject. Compare its performance to sliding window with Go-back-n technique. **10**
(b) Explain with the help of suitable diagram TCP connection management and release. **10**

TURN OVER

Q.P. Code : 581301

5. (a) Explain 1-persistent, p-persistent and 0-persistent CSMA giving strong and weak points of each. **10**

   (b) What is subnetting? Given the class C network 192.168.10.0 use the subnet mask 255.255.255.192 to create subnets and answer the following : **10**

   (i) What is the number of subnets created?

   (ii) How many hosts per subnet?

   (iii) Calculate the IP address of the first host, the last host and the broadcast address of each subnet.

6. Write a short notes on the following **(any two)** : **20**

   (i) SNMP and MIB

   (ii) Bluetooth Architecture

   (iii) Border Gateway Protocol
