1 B. Tech- sem - IV, (2014 Course), Computer
Winter - 2018

B.Tech. SEM -IV (Computer) 2014 Course (CBCS) : WINTER - 2018
SUBJECT: MICROPROCESSORS AND MICROCONTROLLERS

Day : Saturday
Date : 17/11/2018

W-2018-2341

Time : 02.30 PM TO 05.30 PM
Max Marks : 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labeled diagram **WHEREVER** necessary.
4) Assume suitable data, if necessary.

Q.1 **a)** Draw and explain functional block diagram of 8086 microprocessor. **(05)**

b) Explain the control register of 80386 in detail with neat diagram. **(05)**

OR

a) Explain the memory segmentation in 8086. **(05)**

b) Draw and explain FLAG register of 8086. **(05)**

Q.2 **a)** Describe protected mode register model. **(05)**

b) Explain segment descriptor. Draw the general format for segment descriptor. **(05)**

OR

Explain following phases of address translation with respect to 80386: **(10)**

a) Segment translation
b) Page translation

Q.3 **a)** Draw and explain format for BSR mode control word of 8255. **(05)**

b) Explain the control word format for 8254. **(05)**

OR

Draw and explain the architecture of 8237. **(10)**

Q.4 **a)** Explain bus connections in multicore architecture. **(05)**

b) Compare core-to-due and dual core processors. **(05)**

OR

Enlist the features of Pentium processor. Draw and explain Pentium processor functional block diagram. **(10)**

P. T. O.

Q.5 **a)** Discuss PCON (Power Control) register of 8051 with neat diagram. **(05)**

b) Explain and accumulator register of 8051 and state whether it is byte addressable or bit addressable. **(05)**

OR

a) Explain the addressing modes of 8051 with example. **(05)**

b) Draw and explain register bank. **(05)**

Q.6 **a)** Write a program to transfer "Q" serially at 2400 band continuously. **(05)**

b) Indicate which mode and which timer are selected for each of the following: **(05)**

i) MOV TMOD, # 01 H

ii) MOV TMOD, # 20 H

iii) MOV TMOD, # 12 H

OR

Explain in detail the interfacing of stepper motor with 8051 microcontroller. **(10)**

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