Registration no: | | | | | | | | | | |

Total Number of Pages: 01 **M.TECH**

EEPE206

2nd Semester Back Examination – 2016-17

EMBEDDED SYSTEM

BRANCH(S): ELECTRIC & ELECTRONIC ENGG (POWER SYSTEM ENGG), ELECTRICAL POWER SYSTEM, INFORMATION TECH.., POWER SYSTEM ENGG, POWER SYSTEMS

Time: 3 Hours

Max Marks: 70

Q.CODE:Z1194

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) What is a real time operating system. Give one example.
b) What are the constraints of the codesigntool.
c) What does it take to make an OS an RTOS ?
d) What is maximum lateness.
e) What do you mean by task graphs. Give one example of task graph.
f) Define electrical robustness.
g) What is dynamic voltage scaling.
h) Why timer circuits are required in embedded system design.
i) Dynamic power management states of the StrongArm Processor SA 1100.
j) What is the difference between the PIC and AVR microcontrollers.

Q2 **a)** What is the function of A/D converters in embedded system. Explain the sample-and-hold circuit. **(5)**

b) Explain the IMEC design flow. **(5)**

Q3 Describe synchronization and communication for designing an embedded system ? What is message passing ? Explain the various message passing techniques with example. **(10)**

Q4 Explain the embedded development life cycle (EDLC) with proper block diagram. **(10)**

Q5 **a)** What do you mean by state charts ? Describe the state oriented behavior of the state charts with finite state machines. **(5)**

b) Explain the modelling delay in VHDL. **(5)**

Q6 **a)** What is scheduling algorithms? Explain the aperiodic scheduling algorithms? **(5)**

b) What is VHDL modelling. Explain the modelling of sequential logic. **(5)**

Q7 **a)** What is SDL ? Explain the graphical representation with finite state machines. **(10)**

Q8 **Write short notes on (any two)** **(5 x 2)**

a) Codesign Tool (COOL)
b) The OCTOPUS design flow
c) UML
d) Advanced features of VHDL