Total No. of Questions – [09] Total No. of Printed Pages: 02

G.R. No.	

Paper Code – P119-142 (ESE)

DECEMBER 2019 / ENDSEM

F. Y. M. TECH. (E&TC) (SEMESTER - I)

COURSE NAME: Advanced Embedded Processors and Programming

COURSE CODE: ETPA11182

(PATTERN 2018:R1)

Time: [3 Hour] [Max. Marks: 50]

(*) Instructions to candidates:

1) **Answer Q.1, Q.2, Q.3, Q.4 OR Q.5, Q.6 OR Q.7, Q.8 OR Q.9**
2) **Figures to the right indicate full marks.**

Q.1) a) What are steps in embedded software development? [3 marks]

OR

b) What are criterions for processor selection in an embedded application? [3 marks]

Q.2) a) What is data hazard in pipeline? How can it be reduced? [3 marks]

OR

b) How branch prediction logic reduces control hazards in pipeline? [3 marks]

Q.3) a) What are benefits of Thumb2 instruction set in cortex architecture? [2 marks]

OR

b) How CMSIS standard is beneficial for application development using cortex? [2 marks]

Q.4) a) What is significance of RTOS? How to develop application using it? [6 marks]

b) What are common steps to develop application using CUDA? [8 marks]

OR

Q.5) a) Explain with state diagram how RTOS follows concurrent execution? [6 marks]

b) What are message passing interfaces in RTOS? [8 marks]

Q. 6) a) What is embedded linux? How linux is suitable for embedded application? [6 marks]

b) Write typical porting exercise for embedded linux. [8 marks]

OR

Q.7) a) What are different file systems used in embedded Linux? Explain any two file systems. [6 marks]

b) What are modules ? Explain any three module utilities. [8 marks]

Q.8) a) What is Arduino? Explain typical application program structure. [6 marks]

b) Explain features of Arduino UNO board.. [8 marks]

OR

Q.9) a) What is significance of Arduino Library? Explain various components in standard library used for application development [6 marks]

b) With hardware interfacing diagram and application software, explain data acquisition and control system for humidity measurement using arduino. [8 marks]
