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Question Paper Code: 59053

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Interdisciplinary

Computer Science and Engineering

15UGM953 - Embedded Programming

(Common to Electronics and Communication Engineering)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. RISC processor follows the _____ architecture. CO1- R
(a) Harvard (b) Von-Neumann (c) VLIW (d) None of the above
2. Which of the data types has the size that is variable? CO2- R
(a) Int (b) Struct (c) Float (d) Double
3. To operate LED how much voltage is needed? CO3- R
(a) 3v (b) 1.5v (c) 5v (d) None of the above
4. The main goal of the first stage boot loader is to configure the _____ controller. CO4- R
(a) RAM (b) ROM (c) EPROM (d) None of the above
5. A microwave oven uses microwave frequency of _____, to cook food. CO5- R
(a) 2500MHz (b) 2.5GHz (c) Both a&b (d) None of the above

PART – B (5 x 3= 15 Marks)

6. State the different ARM Processor Operating Mode. CO1- U
7. Distinguish between while(1); and while(1) {} in embedded C. CO2- Ana

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|-----|---|----------|
| 8. | Distinguish between DC motor and stepper motor. | CO3- Ana |
| 9. | How do you configure the ADC registers in ARM7. | CO4- Ana |
| 10. | State the applications of embedded systems. | CO5- R |

PART – C (5 x 16= 80Marks)

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| 11. | (a) Explain about A/D converter, D/A converter and its associated registers in ARM 7 with neat example. | CO1- U | (16) |
| | Or | | |
| | (b) Explain the architecture and organization of ARM 7 TDMI. State its features. | CO1- U | (16) |
| 12. | (a) How do you apply the different looping statements in embedded C with neat example for embedded application? | CO2- App | (16) |
| | Or | | |
| | (b) How do you apply the different conditional statements in embedded C with neat example for embedded application? | CO2- App | (16) |
| 13. | (a) Write a simple embedded C program to seven segment display with ARM7 LPC 2148. | CO3- App | (16) |
| | Or | | |
| | (b) Write a simple embedded C program to stepper motor with ARM7 LPC 2148. | CO3- App | (16) |
| 14. | (a) Develop an embedded C program to transmit serially data to outside world with ARM7. | CO4- App | (16) |
| | Or | | |
| | (b) Build the steps needed to interface GSM with ARM 7 processor and develop the embedded C code for the same. | CO4- App | (16) |
| 15. | (a) Analyze the usage of sensors and its purpose to build the Intruder alarm system with necessary hardware and software components. | CO5- Ana | (16) |
| | Or | | |
| | (b) Analyze and build the Anti-lock Breaking system with necessary hardware and software components. | CO5- Ana | (16) |