

JSS MAHAVIDYAPEETHA

JSS SCIENCE AND TECHNOLOGY UNIVERSITY

SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING


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 UNIVERSITY  
 MYSURU

- Constituent College of JSS Science and Technology University
- Approved by A.I.C.T.E
- Governed by the Grant-In-Aid Rules of Government of Karnataka
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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

## VII Semester, 'A' &amp; 'B' Sections

## Entrepreneurship and Management- EC710

## TEST – 2

Duration: 1 Hr.

Date: 13-12-2021

Max. Marks: 20

Name of the paper setters: A. Thyagaraja Murthy and Yashwanth S D

## Course outcome covered in this event:

CO1: Explain entrepreneurship, management and innovation with an emphasis on their evolution. Identify various institutional support for starting new business, assessment of demand and supply in potential areas of growth, opportunity identification and feasibility analysis.

## Cognitive domain:

L1: REMEMBER

L3: APPLY

L5: EVALUATE

L2: UNDERSTAND

L4: ANALYZE

L6: CREATE

## Instructions:

1. Question 4 is compulsory.
2. Answer any 2 from the remaining questions.

Q. No.	CO	Cognitive Domain	Question	Marks
1.	1	2	Discuss various Institutional support available for Entrepreneurship at state, national and international levels?	06
2.	1	2	Differentiate between IDEA and OPPORTUNITY, list in 8 simple steps how to convert an IDEA into product. Quote an appropriate example from Electronic Industry?	06
3.	1	2	Explain 'Demand and supply problem', as an opportunity for Entrepreneurship development, Quote examples.	06
4.	1	2	Do you agree that skills can be developed? If yes, Discuss in detail the role and methods for training in Entrepreneurial development skills?	08



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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### VII Semester, 'A' & 'B' Sections EMBEDDED SYSTEMS – EC745

#### TEST – 2

Duration: 1 Hr.

Date: 14 – 12 – 2021

Max. Marks: 20

Name of The Paper Setter: Puneeth K M

Time: 02.00 to 03.00PM

Course outcome covered in this event:

CO 2: Analyse the basic structure of embedded systems.

Cognitive domain:

L1: REMEMBER

L3: APPLY

L5: EVALUATE

L2: UNDERSTAND

L4: ANALYZE

L6: CREATE

Instructions:

1. Questions 1 and 2 are compulsory.
2. Answer the remaining questions making use of internal choice.

Q. No.	CO	Cognitive Domain	Question	Marks
1.	2	L – 2	Elucidate the working principle of Serial Peripheral Interface. Explain the different configurations used to connect SPI devices to SPI bus.	05
2.	2	L – 3	Evaluate the situations when the context switching is performed. What is the need for context saving when context switching is performed? Illustrate the steps in context switching.	05
3.	2	L – 2	Explicate UART packet format. Also, brief out the advantages and disadvantages of UART Protocol.	05
OR				
4.	2	L – 2	With an illustration explicate the ZigBee protocol stack. What are the different operating modes of ZigBee?	05
5.	2	L – 2	What do you mean by interrupt driven input and interrupt driven output? Explain with illustration and examples.	05
OR				
6.	2	L – 2	What do you mean by interrupt overrun? Explicate the mechanism used to overcome this. Also, analyse how the multiple interrupts are handled by the processor from different interrupt sources.	05





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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**VII Semester, 'A' & 'B' Sections  
AUTOMOTIVE ELECTRONICS – EC731**

**TEST – 2**

**Duration: 1 Hr.**

**Date: 14 – 12 – 2021**

**Max. Marks: 20**

**Name of The Paper Setters: Puneeth K M & Yashwanth S D**

**Time: 09.30 to 10.30AM**

**Course outcome covered in this event:**

CO2: Demonstrate, a comprehension of the roles and implementations of various bus systems used in automotive networking.

CO3: Explain and analyse the main requirements, trends and selection criteria of sensors for automotive applications.

**Cognitive domain:**

**L1: REMEMBER**

**L3: APPLY**

**L5: EVALUATE**

**L2: UNDERSTAND**

**L4: ANALYZE**

**L6: CREATE**

**Instructions:**

1. Questions 1 and 2 are compulsory.
2. Answer the remaining questions making use of internal choice.

Q. No.	CO	Cognitive Domain	Question	Marks
1.	2	L – 2	What are the advantages of using bus system over conventional wiring in automobile? Explicate the technical selection criterions used to select the bus system.	05
2.	3	L – 2	Starting with the necessary equations, define a smart sensor. Outline the step-by-step process of calibration for a smart sensor with representation.	05
3.	2	L – 3	Analyse how reflection free data transfer occur in CAN bus. Also, explicate why the differential data is sent on CAN_H and CAN_L lines with their voltage levels.	05
<b>OR</b>				
4.	2	L – 3	Propose the different types of gateway structures in a vehicle with an illustration.	05
5.	3	L – 2	Explicate how the sensors work in multilayer process to perform open loop and closed loop control actions. Illustrate with an example.	05
<b>OR</b>				
6.	3	L – 2	Elucidate the method to calculate the total error (absolute deviation) in the sensor output with the characteristic curves and error graph for a sensor	05





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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**VII Semester, 'A' & 'B' Sections  
POWER ELECTRONICS – EC720**

**TEST – 2**

**Duration: 1 Hr.**

**Date: 13 – 12 – 2021**

**Max. Marks: 20**

**Name of The Paper Setter: Eshwari A Madappa**

**Time: 02.00 to 03.00PM**

**Course outcome covered in this event:**

**CO-1:** Explain the various power devices and circuits.

**CO-2:** Analyse different power electronics circuits.

**Cognitive domain:**

**L1: REMEMBER**

**L3: APPLY**

**L5: EVALUATE**

**L2: UNDERSTAND**

**L4: ANALYZE**

**L6: CREATE**

**Instructions:**

1. Question 1 is compulsory.
2. Answer the remaining questions making use of internal choice.

Q. No.	CO	Cognitive Domain	Question	Marks
1.	2	L – 2	Derive the equation for rms and average output voltage of single-phase unidirectional AC voltage controller.	10
2.	2	L – 3	A single-phase half wave AC Voltage Controller has input voltage of 230V, 50Hz and a load resistance of $15\Omega$ . The firing angle of thyristor is $60^\circ$ in each positive half cycle. Calculate <ol style="list-style-type: none"> <li>i) Average output voltage</li> <li>ii) RMS output voltage</li> <li>iii) Average thyristor current</li> <li>iv) RMS thyristor current</li> </ol>	05
<b>OR</b>				
3.	2	L – 3	An AC Voltage Controller has a resistive load of $12\Omega$ and input voltage of 120V, 50Hz. The thyristor is ON for 45 cycles and OFF for 55 cycles. Calculate <ol style="list-style-type: none"> <li>i) RMS output voltage</li> <li>ii) Input power factor</li> <li>iii) Average thyristor current</li> <li>iv) RMS thyristor current</li> </ol>	05
4.	1	L – 1	With circuit and waveforms explain half wave RC firing circuit.	05
<b>OR</b>				
5.	1	L – 1	With circuit and waveforms explain full wave RC firing circuit.	05