

## SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING



**JSS**  
SCIENCE AND  
TECHNOLOGY  
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

AUTOMOTIVE ELECTRONICS – EC731

TEST – 1

Duration: 1 Hr.

Date: 12 – 11 – 2021

Max. Marks: 20

Name of The Paper Setters: Puneeth K M &amp; Yashwanth S D Time: 09.30 to 10.30AM

Course outcome covered in this event:

CO1: Exhibit the knowledge of working of Sensors and actuators in Electronic fuel injection, ignition systems and Active / Passive safety 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.	1	L – 3	The voltage driven by automobile from the battery is approximately 12V – 15V. During the primary electric arc at the gas discharge bulb, the voltage required ranges between an 18 to 20kV. <u>Which type of circuit arrangement is used for this high voltage generation?</u> Brief out the <u>principle of operation</u> with illustration.	05
2.	1	L – 3	“Dynamic headlamp levelling control incurs a higher cost than static headlamp levelling control”. Justify this statement.	05
3.	1	L – 2	What are the components of ABS? Explicate the three operation settings of Hydraulic modulator with an illustration.	05
OR				
4.	1	L – 2	Passive safety systems protect vehicle occupants when the accident occurs. Outline the working of different passive safety systems	05
5.	1	L – 2	Analyze the working principle of a halogen bulb and how high beam and low beam projections can be obtained using a dual filament halogen bulb.	05
OR				
6.	1	L – 2	What are the functions of Motronic Engine Management system in an automobile? Explain the working of electronically controlled throttle valve with necessary illustration.	05

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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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

TEST – 1

Duration: 1 Hr.

Date: 12 – 11 – 2021

Max. Marks: 20

Name of The Paper Setter: Puneeth K M

Time: 01.30 to 02.30PM

Course outcome covered in this event:

CO1: Explain the major components that constitute an embedded system.

CO 2: Analyse the basic structure of embedded systems.

Analyse and explain the major components that constitute an embedded system.

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.	1	L – 4	What happens to the embedded system when the supply voltage falls below the Threshold voltage? How this condition is handled in embedded system? Explicate the circuit and component selection criteria used.	05
2.	1	L – 3	Elucidate the meaning of RISC processor/controller. Since RISC processor/controller doesn't support pipeline function how the memory related operations take place? Infer with necessary illustration of an example.	05
3.	2	L – 2	Define embedded system. Explain the purposes of embedded systems.	05
OR				
4.	2	L – 2	Explain the different types of embedded systems and the characteristics of embedded systems.	05
5.	1	L – 3	Explicate how isolation and interference immunity is provided in embedded systems. Also, deduce the component used for dynamic power and signal selection.	05
OR				
6.	1	L – 3	What do you mean by static RAM and Dynamic RAM? Why Static RAM is costlier than Dynamic RAM? Support your answer with necessary explanation and illustration.	05



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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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

## TEST – 1

Duration: 1 Hr.

Date: 11 – 11 – 2021

Max. Marks: 20

Time: 01.30PM – 02.30PM

Name of the paper setter: Eshwari A Madappa

Course outcome covered in this event:

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

CO-3: Design power electronics circuits to meet the given specifications.

Cognitive domain:

L1: REMEMBER

L2: UNDERSTAND

L3: APPLY

L4: ANALYZE

L5: EVALUATE

L6: CREATE

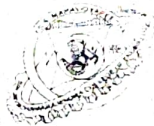
Instructions:

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

Q. No.	CO	Cognitive Domain	Question	Marks
1.	1	L – 1	Define power electronics. Briefly explain the block diagram of power electronics system.	05
2.	3	L – 3	Design the phase-controlled circuit of SCR comprising an inductive load of $R=15\Omega$ and $L=0.2H$ with the latching current of 20mA. The input voltage to the circuit is $335\sin 340t$ , obtain the minimum gate pulse width for reliable triggering of SCR if gated at $\pi/3$ angle for every positive half cycle.	05
3.	1	L – 2	Discuss the different types of power electronic devices with their symbols. In each case draw their input and output characteristics.	05
OR				
4.	1	L – 2	With necessary sketches, explain turn ON and turn OFF characteristics of SCR.	05
5.	1	L – 2	Explain controlled and uncontrolled rectifiers with input and output characteristics.	05
OR				
6.	1	L – 2	With necessary sketches, explain switching characteristics of IGBT.	05



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

VII Semester, 'A' & 'B' Sections

Entrepreneurship and Management- EC710

TEST – 1

Duration: 1 Hr.

Date: 11– 11 – 2021

Max. Marks: 20

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

Course outcome covered in this event: 1,

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 why do you think entrepreneurship/entrepreneurs are necessary for growth of any country ?	06
2.	1	2	Explain the various types or classifications of entrepreneurs discuss the social responsibilities of entrepreneurs towards different groups/region in a country ?	06
3.	1	2	Explain the road to become an entrepreneur in 5 simple steps, write the advantages of being an entrepreneur ?	06
4.	1	2	Discuss the key characteristics that should be possessed by successful entrepreneurs in order to perform entrepreneurial functions effectively ?	08