	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Supplementary Examination – Summer 2022** **Course: B. Tech. Branch : Electrical Semester :IV** **Subject Code & Name: Solid State Devices (BTEEE406A)** **Max Marks: 60 Date: Duration: 3 Hr.**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* *3. Use of non-programmable scientific calculators is allowed.* *4. Assume suitable data wherever necessary and mention it clearly.*		
		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	**With the help of circuit diagram, explain the operation of a clipper with additional DC supply.**	**CO1**	**6M**
B)	**Explain the operation of Light emitting diode.**	**CO1**	**6M**
C)	**Draw and explain common emitter configuration of transistor.**	**CO1**	**6M**
Q.2	**Solve Any Two of the following.**		
A)	**Write Barkhausen criteria. Explain colpit Oscillator**	**CO2**	**6M**
B)	**Give the Types of Feedback amplier and explain any one of them**	**CO2**	**6M**
C)	**Explain working of JFET with schematic diagram.**	**CO1**	**6M**
Q. 3	**Solve Any Two of the following.**		
A)	**Explain any six parameter of Op-Amp.**	**CO2**	**6M**
B)	**With the help of circuit diagram explain op-amp inverting amplifier. Derive an expression for the voltage gain.**	**CO2**	**6M**
C)	**Draw the block diagram of op-amp and explain the purpose of each block.**	**CO2**	**6M**
Q.4	**Solve Any Two of the following.**		
A)	**Draw and explain the circuit of high pass filter. Draw its characteristics.**	**CO3**	**6M**
B)	**What are the types of comparator. Explain zero crossing detector.**	**CO3**	**6M**
C)	**Explain the IC555 timer as an monostable multivibrator with waveforms.**	**CO3**	**6M**
Q. 5	**Solve Any Two of the following.**		
A)	**What is instrumentation amplifier. Explain with the help of neat**	**CO2**	**6M**

	diagram the operation of typical instrumentation amplifier.		
B)	**Briefly explain about various types of regulators.**	**CO3**	**6M**
C)	**Explain application of Op-amp as an logarithmic amplifier.**	**CO2**	**6M**
	***** End *****		

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