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Code No. : 14551 O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (Mech. Engg.) IV-Semester Backlog Examinations, August-2022**Basic Electronics Engineering**

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B****Part-A (10 × 2 = 20 Marks)**

Q. No.	The stem of the question	M	L	CO	PO
1.	List applications of a diode.	2	1	1	1
2.	Compare half-wave and full-wave rectifiers.	2	2	1	1
3.	Define current gain α and β for a transistor.	2	1	2	2
4.	“FET is a voltage-controlled device”, justifies the statement.	2	2	2	2
5.	State the Barkhausen’s criteria for oscillations.	2	1	2	1
6.	List the advantages of a negative feedback amplifier.	2	2	2	1
7.	Define a transducer and classify the same.	2	1	4	1
8.	List the applications of CRO.	2	1	3	2
9.	Define the transition and diffusion capacitance of a diode.	2	1	1	1
10.	Compare BJT and FET.	2	2	2	1
Part-B (5 × 8 = 40 Marks)					
11. a)	Discuss the working principle of a full-wave rectifier with a suitable circuit diagram and waveforms.	4	1	1	2
b)	With the help of V-I characteristics illustrate the working of a Zener diode.	4	3	1	2
12. a)	Illustrate the working principle N-channel JFET with the help of suitable diagrams.	4	3	2	1
b)	Compare BJT and FET.	4	2	2	1
13. a)	Discuss the advantages of negative feedback in amplifiers.	4	2	3	2
b)	Explain RC phase shift oscillators.	4	3	3	2
14. a)	With a neat block diagram, explain the working of the cathode ray oscilloscope.	4	2	4	2
b)	With the required sketches, explain the working of the LVDT transducer.	4	2	4	2
15. a)	Differentiate static and dynamic resistances of a PN diode with the help of its VI characteristics.	4	2	1	1
b)	Explain construction and operation of n- channel depletion MOSFET.	4	2	2	2
16. a)	Give a broad classification of oscillators and show the frequency of LC oscillator is $\frac{1}{2\pi\sqrt{LC}}$	4	3	3	1
b)	Differentiate between capacitive and inductive transducer.	4	3	4	2
17.	Answer any <i>two</i> of the following:				
a)	Compare PN junction diode and Zener diode.	4	3	1	1
b)	With the help of a circuit diagram and suitable waveform illustrate the input and output characteristics of the CE configuration transistor.	4	3	2	2
c)	Define and explain classification of oscillators in detail.	4	3	2	1

M : Marks; L: Bloom’s Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%
