DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Examination – 2022

Course: B. Tech. **Branch: Electronics Engineering** **Semester: V**

Subject Code & Name: Electronics Measurements and Instruments (BTEXPE504D)

Max Marks: 60 **Date:08/02/2023** **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 followings.**		**12**
A)	Explain the principle and operation of a Q- Meter with its application.	**Apply(1)**	**6**
B)	What is of vector impedance meter? Explain a commercial vector impedance meter with the help of neat diagram.	**Understand(1)**	**6**
C)	Define the terms Accuracy, Error, Precision, Resolution, Sensitivity and Measurement.	**Remember(1)**	**6**
Q.2	**Solve any *two* of the followings.**		**12**
A)	Explain with the help of neat diagram, the working principal of a digital frequency meter.	**Remember(2)**	**6**
B)	What is the function of time base selector? Discuss its operation in detail.	**Apply(2)**	**6**
C)	What is an electronic counter? How can it used to do measurements in the following modes- 1.Frequency mode 2.Ratio mode 3.Time interval mode	**Analyze(2)**	**6**
Q. 3	**Solve any *two* of the followings.**		**12**
A)	With neat block diagram, discuss the working principle and operation of a function generator	**Remember(3)**	**6**
B)	Explain working of following methods of a harmonic distortion analyzer. 1) Resonance Bridge 2) Wien's Bridge 3) Bridged T-Network Method	**Remember(3)**	**6**
C)	With suitable block diagram, explain the construction and working of a spectrum analyzer. State its applications.	**Remember(3)**	**6**
Q.4	**Solve any *two* of the followings.**		**12**
A)	Discuss the construction and operation of an Oscilloscope. List and explain its application.	**Apply(4)**	**6**
B)	Explain the construction and working of a dual trace oscilloscope.	**Apply(4)**	**6**
C)	State and explain different types of probes used in the measurements with a CRO.	**Apply(4)**	**6**

Q. 5	**Solve any *two* of the followings.**		**12**
A)	What is a data acquisition system (DAS)? Explain the construction and working of a single channel DAS.	**Analyze(5)**	**6**
B)	List any 6 the types of temperature transducer. Explain the operation of a thermocouple.	**Apply(5)**	**6**
C)	Define electrical transducer? Explain classification and selection criteria for a transducer.	**Analyze(5)**	**6**

***** End *****