Question Paper Code: 59B51

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

Open elective

Civil Engineering

15UBM951 –BIOMEDICAL INSTRUMENTATION SYSTEMS

(Common to CSE, ECE, EEE, EIE, Mechanical, IT, Chemical)

(Regulation 2015)

Duration: 1.15 hrs   Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The sweep generator of a CRO is used to produce   CO1- R

    (a) Sinusoidal voltage for the horizontal deflection of electron beam

    (b)Saw tooth voltage for the vertical deflection of electron beam

    (c) Sinusoidal voltage for the vertical deflection of electron beam

    (d) Saw tooth voltage for the horizontal deflection of electron beam

2. Output of sweep and time base generator will be   CO1- R

    (a) sinusoidal waveform   (b) cos waveform

    (c) saw tooth waveform   (d) both a and b

3. The graphic record of the heart sound is called _____.   CO2- R

    (a) Phonocardiogram   (b) Photoplethesmography

    (c) ECG   (d) EEG.

4. An EEG measures: CO2- R

    (a) Brain waves   (b) Emotional response

    (c) Heart rate   (d) Galvanic skin response

5. Input offset current is evaluated by,_____.   CO3- R

    (a)) $|I_{OS}| = I_B^+ + I_B^-$ (b) $I_{OS} = I_B^+ + I_B^-$ (c) $|I_{OS}| = I_B^+ - I_B^-$ (d) $I_{OS} = I_B^+ - I_B^-$

6. In the internal circuit of an Operational Amplifier, _____ is   CO3- R
    used as the buffer.

    (a) Push Pull amplifier   (b) Emitter Follower

    (c) Differential Amplifier   (d) Common Emitter

7. Indicator dilution method is used to measure   CO4- R

    (a) cardiac output   (b) blood flow   (c) pulse rate   (d) none of above

8. 120 to 140 mm of mercury is an adults normal   CO4- R

    (a) systolic pressure   (b) diastolic pressure

    (c) peristalsis pressure   (d) water pressure

9. Value of pH is determined by_____.   CO5- R

    (a) pH electrode   (b) pH detector   (c) pH balancer   (d) pH pectrometer

10. A manometer is used to measure the pressure of a   CO5- R

    (a) Heavy liquids   (b) Light liquids

    (c) Both light as well as heavy liquids   (d) None of the above

<center>PART – B (3 x 8= 24 Marks)</center>

<center>**(Answer any three of the following questions)**</center>

11.	Explain in detail about the Surface and needle electrode.	CO1- Ana	(8)
12.	Draw the modern EEG unit and explain the functions.	CO2- U	(8)
13.	Explain the power and efficiency of ECG-Bio amplifier..	CO3- U	(8)
14.	List the various methods of Blood flow measurement and explain any one method.	CO4- U	(8)
15.	Explain the working principle of flame photometer with necessary diagrams.	CO5- U	(8)

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