

Minor-I

RESEARCH TECHNIQUES IN BIOMEDICAL ENGINEERING (BML 800)

Time: 1 Hr

Max. Marks: 25

Attempt all questions. The weightage carried by each question is given in the corresponding bracket.

Q1 Write a brief note (not more than 6 lines) on applications of telemedicine in Neurosurgery. Please be precise and focused. [4]

Q2. Change the orthogonal basis $\{(1,3), (3,-1)\}$ to an orthonormal basis for \mathbb{R}^2 . Find the coordinate of $(3,7)$ in that orthonormal basis. [4]

Q3. Explain how the input impedance of an amplifier to record EEG can compensate for loose/poor connection of electrode to the scalp? [4]

Q4. Which neurotransmitters are responsible for inhibitory and excitatory post synaptic potential in brain? [2]

Q5. Explain the role of occipital lobe in the brain. [3]

Q6. Find the Fourier transform of signal $x(t) = \delta(t-5)$ and sketch the magnitude and phase of $X(\omega)$. Comment on the sketch. [4: Impulse function] [2,4,2]