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Question Paper Code: 96B02

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2024

Sixth Semester

Biomedical Engineering

19UBM602- BIOMECHANICS

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Summarize the applications of biomechanics CO1- U
2. Give some examples of scalar and vector quantity. CO1- U
3. Draw the structure of Human Bone. CO2- U
4. Define Composition of Bones. CO2- U
5. Give some examples of Rotational Head injury and its causes and effects. CO3- U
6. Define Accident reconstruction. CO3- U
7. Define Alveoli CO4- U
8. Justify the importance of breathing mechanism. CO4- U
9. List the parts of human heart. CO5- U
10. Justify the importance of heart valve and its mechanism. CO5- U

PART – C (5 x 16= 80 Marks)

11. (a) Elaborate in detail about the resolution and composition of forces. CO1- U (16)
Or
(b) Express the velocity and acceleration with suitable diagram. CO1- U (16)
12. (a) With a neat diagram articulate the composition and mechanical property of Cortical Bone. CO2- U (16)

Or

- (b) Explain the structure of Human Bone and give necessary example relating to the physiological system. Draw diagram wherever necessary. CO2- U (16)
13. (a) Elaborate in detail about the Skeletal Joints. CO3- U (16)
Or
(b) Explain the Forces and stresses in human joints with suitable diagram. CO3- U (16)
14. (a) Sketch the mechanism of Alveoli and explain its function CO4- App (16)
Or
(b) Illustrate the interaction of blood and lung and draw its structure CO4- App (16)
- 15 (a) Illustrate the concept of Sphygmomanometer – a blood pressure measurement. CO5- App (16)
Or
(b) Interpret the heart diseases that can be cured related to prosthetic heart valves replacement. CO5- App (16)