

Code No: R05311105

R05**Set No. 2**

III B.Tech I Semester Examinations, November 2010
BIOFLUIDS AND MECHANICS
Bio-Medical Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
 All Questions carry equal marks

1. (a) Draw and label the P-V curve of a lung.
 (b) How does P-V curve of lung explains the interaction between blood and lungs.
 (c) Enumerate any five cardiovascular diseases. [5+6+5]
2. (a) How is the blood viscosity determined?
 (b) What are the factors on which the blood viscosity depends? [8+8]
3. (a) Explain the mechanical properties of arteries, arterioles and give their significance.
 (b) Compare the mechanical properties of the arteries and veins.
 (c) Write short notes on arteriosclerosis. [6+6+4]
4. (a) Draw a Kelvin model and derive its basic governing equation.
 (b) What is the use of viscoelastic models? [8+8]
5. Describe various joints in human body and role of articular cartilage in smooth locomotion. [16]
6. (a) Write notes on Blood viscosity variation.
 (b) What are Fahraeus-Lindquist and inverse effects? Describe the nature of red blood cells in tightly fitting tubes with illustrations. [8+8]
7. (a) Describe briefly about the Viscoelasticity of soft tissues.
 (b) Justify the viscoelastic nature of the bone. [8+8]
8. Write short notes on:
 - (a) Hookes law
 - (b) Newtonian and non Newtonian fluids
 - (c) Constitutive equation. [5+6+5]

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R05**Set No. 4**

III B.Tech I Semester Examinations, November 2010
BIOFLUIDS AND MECHANICS
Bio-Medical Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
 All Questions carry equal marks

1. Describe various joints in human body and role of articular cartilage in smooth locomotion. [16]
2. (a) Draw and label the P-V curve of a lung.
 (b) How does P-V curve of lung explains the interaction between blood and lungs.
 (c) Enumerate any five cardiovascular diseases. [5+6+5]
3. (a) Draw a Kelvin model and derive its basic governing equation.
 (b) What is the use of viscoelastic models? [8+8]
4. (a) How is the blood viscosity determined?
 (b) What are the factors on which the blood viscosity depends? [8+8]
5. Write short notes on:
 - (a) Hookes law
 - (b) Newtonian and non Newtonian fluids
 - (c) Constitutive equation. [5+6+5]
6. (a) Explain the mechanical properties of arteries, arterioles and give their significance.
 (b) Compare the mechanical properties of the arteries and veins.
 (c) Write short notes on arteriosclerosis. [6+6+4]
7. (a) Describe briefly about the Viscoelasticity of soft tissues.
 (b) Justify the viscoelastic nature of the bone. [8+8]
8. (a) Write notes on Blood viscosity variation.
 (b) What are Fahraeus-Lindquist and inverse effects? Describe the nature of red blood cells in tightly fitting tubes with illustrations. [8+8]

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R05**Set No. 1**

III B.Tech I Semester Examinations, November 2010
BIOFLUIDS AND MECHANICS
Bio-Medical Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
 All Questions carry equal marks

1. (a) Describe briefly about the Viscoelasticity of soft tissues.
 (b) Justify the viscoelastic nature of the bone. [8+8]
2. Write short notes on:
 - (a) Hookes law
 - (b) Newtonian and non Newtonian fluids
 - (c) Constitutive equation. [5+6+5]
3. Describe various joints in human body and role of articular cartilage in smooth locomotion. [16]
4. (a) How is the blood viscosity determined?
 (b) What are the factors on which the blood viscosity depends? [8+8]
5. (a) Write notes on Blood viscosity variation.
 (b) What are Fahraeus-Lindquist and inverse effects? Describe the nature of red blood cells in tightly fitting tubes with illustrations. [8+8]
6. (a) Explain the mechanical properties of arteries, arterioles and give their significance.
 (b) Compare the mechanical properties of the arteries and veins.
 (c) Write short notes on arteriosclerosis. [6+6+4]
7. (a) Draw and label the P-V curve of a lung.
 (b) How does P-V curve of lung explains the interaction between blood and lungs.
 (c) Enumerate any five cardiovascular diseases. [5+6+5]
8. (a) Draw a Kelvin model and derive its basic governing equation.
 (b) What is the use of viscoelastic models? [8+8]

Code No: R05311105

R05**Set No. 3**

III B.Tech I Semester Examinations, November 2010
BIOFLUIDS AND MECHANICS
Bio-Medical Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
 All Questions carry equal marks

1. (a) How is the blood viscosity determined?
 (b) What are the factors on which the blood viscosity depends? [8+8]
2. Write short notes on:
 - (a) Hookes law
 - (b) Newtonian and non Newtonian fluids
 - (c) Constitutive equation. [5+6+5]
3. (a) Write notes on Blood viscosity variation.
 (b) What are Fahraeus-Lindquist and inverse effects? Describe the nature of red blood cells in tightly fitting tubes with illustrations. [8+8]
4. (a) Draw a Kelvin model and derive its basic governing equation.
 (b) What is the use of viscoelastic models? [8+8]
5. (a) Explain the mechanical properties of arteries, arterioles and give their significance.
 (b) Compare the mechanical properties of the arteries and veins.
 (c) Write short notes on arteriosclerosis. [6+6+4]
6. Describe various joints in human body and role of articular cartilage in smooth locomotion. [16]
7. (a) Describe briefly about the Viscoelasticity of soft tissues.
 (b) Justify the viscoelastic nature of the bone. [8+8]
8. (a) Draw and label the P-V curve of a lung.
 (b) How does P-V curve of lung explains the interaction between blood and lungs.
 (c) Enumerate any five cardiovascular diseases. [5+6+5]
