

## Unit 2 - Week 0 : Prerequisite

Course outline
How does an NPTEL online course work?
Week 0 : Prerequisite
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### Assignment 0

The due date for submitting this assignment has passed. **Due on 2020-01-26, 23:59 IST.**  
 As per our records you have not submitted this assignment.

- 1) The Bernoulli's equation is valid for \_\_\_\_\_. 1 point
  - Compressible flows
  - Non-Newtonian flows
  - Inviscid flows
  - Viscous flows

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Inviscid flows*
- 2) Poiseuille law is applied for ----- flow. 1 point
  - Fully-developed turbulent flow
  - Fully-developed laminar flow
  - Developing laminar flow
  - Inviscid flow

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Fully-developed laminar flow*
- 3) Reynolds number is defined as \_\_\_\_\_. 1 point
  - Ratio of pressures at the inlet to that at the outlet of a pipe
  - Ratio of gravity to inertial force
  - Ratio of gravity to viscous force
  - Ratio of inertial force to viscous force

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Ratio of inertial force to viscous force*
- 4) Which of the following condition is generally true for laminar flow in a circular pipe? 1 point
  - $Re < 2100$
  - $Re > 2100$
  - $2100 < Re < 4000$
  - $Re > 10000$

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Re < 2100*
- 5) Which type of blood vessels carries blood away from the heart to other body parts? 1 point
  - Veins
  - Arteries
  - Capillaries
  - Venules

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Arteries*
- 6) Which of the following vessels generally carry blood from different body parts to human heart? 1 point
  - Arteries
  - Veins
  - Capillaries
  - Arterioles

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Veins*
- 7) What is the organ that pumps blood all throughout the human body? 1 point
  - The lungs
  - The heart
  - The kidney
  - The blood vessels and capillaries

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*The heart*
- 8) Viscosity of the blood \_\_\_\_\_ with an increase in shear rate. 1 point
  - Decreases
  - Increases
  - Remains constant
  - First increases and then decreases

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Decreases*
- 9) Blood has \_\_\_\_\_. 1 point
  - Plasma
  - Red blood cells
  - White blood cells
  - Plasma, Red blood cells, white blood cells

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Plasma, Red blood cells, white blood cells*
- 10) The dynamic viscosity of a liquid is 0.003 Pa.s, whereas, the density is 1060 kg/m<sup>3</sup>. The kinematic viscosity in m<sup>2</sup>/s is. 1 point
  - $7.2 \times 10^{-3}$
  - $7.2 \times 10^3$
  - $2.8 \times 10^6$
  - $2.8 \times 10^{-6}$

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
 *$2.8 \times 10^{-6}$*
- 11) If the Reynolds number is greater than 10000, the flow in a pipe is 1 point
  - Turbulent
  - Laminar
  - Transition
  - Compressible

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Turbulent*
- 12) Surface tension is 1 point
  - Force per unit area
  - Force per unit length
  - Force per unit volume
  - Force per unit time

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Force per unit length*
- 13) Newton's law of viscosity relates 1 point
  - Pressure velocity and viscosity
  - Shear stress and rate of strain in a fluid
  - Temperature, viscosity and velocity
  - Pressure, temperature, viscosity and rate of angular deformation in a fluid.

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Shear stress and rate of strain in a fluid*
- 14) Young's modulus is defined as 1 point
  - Tensile strain/tensile stress
  - Tensile stress/tensile strain
  - Tensile stress  $\times$  tensile strain
  - Length/area

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Tensile stress/tensile strain*
- 15) Which of the following method is used for diagnosis of arterial diseases? 1 point
  - Angioplasty
  - Angiography
  - Spirometry
  - X - Ray

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Spirometry*
- 16) Which of the following method is used for treatment of arterial diseases? 1 point
  - Angioplasty
  - Angiography
  - Ultrasound
  - X - Ray

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Angioplasty*
- 17) What is the normal blood pressure in humans? 1 point
  - 100 – 140 mmHg
  - 120 – 80 mmHg
  - 120 – 160 mmHg
  - 160 – 200 mmHg

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*120 – 80 mmHg*
- 18) Euler's equation is useful in the analysis of. 1 point
  - Non – viscous flow
  - Viscous flow
  - Turbulent flow
  - Non-Newtonian flow

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Non – viscous flow*
- 19) How much is the average blood volume in the adult person? 1 point
  - 1 litre
  - 5 litre
  - 10 litre
  - 15 litre

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*5 litre*
- 20) What is not the role of blood in human body? 1 point
  - Supplying oxygen
  - Supplying nutrients
  - Removing waste and carbon dioxide
  - Digestion

**No, the answer is incorrect.**  
 Score: 0  
 Accepted Answers:  
*Digestion*