



الزمن: ساعتان
مجموعة (1) – (أ)
أستاذ المادة: د. رمضان على حسن

الاختبار الدوري الاول
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مقرر: أساسيات الفيزياء الطبية
برنامج: الفيزياء الطبية

الرقم الجامعي:

الاسم:

Please choose the correct answer (circle the letter of the correct answer @): -

- For hypotension (low blood pressure) the pressure (mmHg) may be about;
a) **110/60** b) 120/80 c) 155/110 d) 80/120
- When 70-kg person jumping from a height of 60 cm, the energy is absorbed by the leg bones about;
a) 470 J b) 4800 erg c) 48 erg **d) 412 J**
- In -----flow fluid the velocity is lower at the walls and increases toward the center of the pipe.
a) **laminar** b) turbulent c) incompressible d) non-viscose
- For a given momentum change, the magnitude of the impulsive force is----- the collision time;
a) greater than b) equal to c) proportional to **d) inversely proportional** to
- If the force applied to the shoulder equal 50 N with the man height to shoulder 1.5 m, the torque then about;
a) 40 N.m b) 75 N **c) 75 N.m** d) 33.3 N.m
- The center of gravity -----as the person moves and bends.
a) go up b) **shift** c) not change. d) Go down
- Using the Doppler effect, it is possible to measure -----within a body.
a) Wavelength **b) motions** c) pressure d) Elasticity
- The ratio between the stress and strain is called;
a) Longitudinal strain b) **Young's modulus** c) Elasticity d) none of them
- The magnitude of the frictional force depends on;
a) Coefficient of friction b) the body weight c) the body mass **d) a & b**
- Sound is a----- wave. **a) mechanical** b) electromagnetic c) dynamic d) transverse
- The wavelength of ultrasound in air at 20 C° with frequency of 2×10^6 Hz about;
a) 2.7 mm b) **1.7×10^{-2} cm** c) 2×10^6 cm d) 26.5cm
- A Steel block with 30 kg mass is pulled by a horizontal force along a rough horizontal ice surface ($\mu_k = 0.01$) at a constant accelerate. then the frictional force about;
a) 3.92 N b) 1.91 N c) 0.74 N **d) 2.95 N**

13. The decibel rating of the $1.0 \times 10^{-7} \text{ W/cm}^2$ intensity of sound;
- a) 100000 dB b) 60 dB **c) 90 dB** d) 40 dB
14. The average velocity of the blood in the aorta of radius 1 cm if the flow rate is 3 liter/min about;
- a) 26.5 cm/s b) 21 m/s c) 21 cm/s d) **16 cm/s**
15. The threshold of pain of Sound Levels about;
- a) 10^{-16} W/cm^2 b) 90 dB c) 10^{-12} W/cm^2 **d) 120 dB**
16. According to Bernoulli's Equation as the tube diameter decreased the fluid velocity is;
- a) Become laminar **b) increased** c) decreased d) not change
17. If 183N required to topple standing person of mass 70 kg & height to shoulder 1.5 m, then his feet spread is; a) **0.8 m** b) 0.4 m c) 1.6 m d) $8.375 \times 10^4 \text{ m}$
18. Mechanical advantage of Class III lever is; a) =1 b) >1 c) =0 **d) <1**
19. The -----is larger in a fast collision than in a slower collision.
- a) Momentum b) collision **force** c) spring constant d) stress
20. Most skeletal muscles in the body arrangement provides for..... of the limbs.
- a) **Greater speed** b) longitudinal strain c) greater force d) longitudinal stress
21. In cut off method when the pressure in the balloon drops to its normal size, the flow in the artery becomes; a) Laminar and the noise appear b) **laminar, and the noise disappears**
c) turbulent, and the noise appear d) turbulent, and the noise disappears.
22. In supine position, as the blood flows away from the heart, the average pressure;
- a) Become laminar b) increased c) **decreased** d) not change
23. The viscosity of a fluid is a measure of its to flow
- a) Compressing b) pressure c) velocity d) **resistance**
24. The human ear is capable of detecting sound at frequencies between about;
- a) 10 to 20 kHz b) 10 to 8 kHz c) 20 to 4 kHz **d) 20 to 20 kHz**
25. The compression ($\Delta \ell$) equivalent to;
- a) AL/Y b) **LS_E/Y** c) YL/A d) AS_B/Y