

***Yeka Sub City***  
***Woreda 08 Education Office***

***2012 Physics Model***  
***Examination for Grade 8***

***March 2012***  
***Addis Ababa***

**CHOOSE THE CORRECT ANSWER FROM THE GIVEN FOUR ALTERNATIVES**

1. Which one of the following field of study is **not** the branch of physics?  
 A. Electricity    B. Engineering    C. Mechanics    D. Optics
2. Which one of the following is **not** a good criterion for evaluating design in engineering?  
 A. Is the product durable    C. Is the product cost effective  
 B. To live better and enjoy their environment    D. How does the product affect the individual
3. Which one of the following is a fundamental physical quantity?  
 A. Area    B. Force    C. Mass    D. Volume
4. Which one of the following has magnitude but **not** direction?  
 A. Displacement    B. Force    C. Velocity    D. Volume
5. Assume the height of your physics teacher is 1m, 70cm and 8mm. what is his height in cm?    A. 170.8    B. 1708    C. 1.708    D. 178
6. Which of the following describes rectilinear motion?  
 A. Motion of earth around the sun.    B. A falling ball from a top of a building.  
 C. Motion of wheel of car.    D. Motion of pendulum.
7. Which of the following is a traditional unit to measure time?  
 A. Cubits    B. Ketir    C. Spans  
 D. Strides
8. A car travelling at 4m/s towards West accelerates uniformly at a rate  $3\frac{m}{s^2}$  for 3sec. What is the velocity of the car after 3 sec?  
 A.  $\frac{10m}{s}$     B.  $\frac{13m}{s}$     C.  $\frac{16m}{s}$     D.  $\frac{19m}{s}$
9. A force of 40N acts on an object for 0.5 second changing its velocity by  $\frac{10m}{s}$ . What is the mass of the body? (Take  $g = \frac{10m}{s^2}$ ).  
 A. 20kg    B. 30kg    C. 15kg    D. 2kg
10. The force of static friction between a body of mass 20kg and horizontal table is 80N. What is the coefficient between the body and the table?  
 A. 0.2    B. 0.4    C. 0.3    D. 0.7
11. One of the following is **not** the unit of work done?

A. 'Joule      B. Newton meter      C.  $\frac{kgm^2}{s^2}$       D.  $\frac{kgm}{s^2}$

12. An irregular shaped stone displaced  $0.4dm^3$  of water when it is totally submerged. What is the volume of the stone?

A.  $0.2dm^3$       B.  $0.4dm^3$       C.  $1dm^3$       D.  $4dm^3$

13. If a car used up to 1000J of energy in 5 second. What is the power developed by the car?

A. 200w      B. 150w      C. 300w      D. 750w

14. The temperature of an object is  $40^\circ_c$ . What is this temperature in Fahrenheit scale?

A.  $72^\circ_c$       B.  $84^\circ_c$       C.  $96^\circ_c$       D.  $104^\circ_c$

15. The escaping out of molecules from the surface of a liquid at any temperature is called

A. Boiling      B. Cooling      C. Evaporation

D. Melting

16. What is the speed of the sound at a given temperature if an echo is heard 5 second later from a tall building which is 900m away from the source?

A. 90 m/s      B. 180 m/s      C. 360 m/s      D.

720 m/s

17. Like charges repel and unlike charges attract each other. This is law of

A. electricity      B. electromagnetism      C. electrostatics

D. electric energy

18. When a substance is freezing the heat is

A. added to it.      B. Taken from it.      C. Supplied to it.

D. generator.

19. One of the following is **false** about ammeter.

A. It is used to measure current.

B. It is operated by the magnetic effects of an electric current.

C. It is connected in parallel with the source of potential difference.

D. It is connected in series with the resistor.

20. A  $2\Omega$  resistor is connected across a 12 v battery calculate the charge passing in 2 second?      A. 6c      B. 12c

C. 24c      D. 30c

21. In which medium sound travels with the lowest speed.

A. Air      B. Alcohol      C. Copper      D. Water

22. Which one of the following represents a prefix and its respective power of ten?

- A. milli;  $10^3$       B. Centi;  $10^{-2}$       C. Killo;  $10^{-3}$       D. mega;  $10^{-6}$

23. What pressure is created when a force of 64N is applied over an area of  $4\text{m}^2$ ?

- A. 256 pa      B. 16 pa      C. 16 Nm      D. 256 Nm

24. Which Newton's laws of motion describe the pair existence of force?

- A. Newton's first laws B. Newton's second laws C. Newton's third laws D. laws Inertia

25. An electric motor has a power of 0.2 kw. How much work can it perform in 4 seconds?

- A. 200J      B. 800J      C. 4000J  
D. 2000J

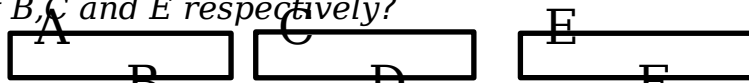
26. Which of the following is a force multiplying machine?

- A. bicycle      B. Hydraulic press      C. Single fixed pulley  
D. third order lever

27. In which media would sound travel faster?

- A. Air      B. Steel      C. Water      D. Nitrogen

28. Consider three bar magnets as shown below, end 'b' attracts end 'C' and end 'c' repels end 'E' and end 'D' is North pole, then what is the poles of B, C and E respectively?



- A. South, South, South B. North, South, South C. North, South, North D. South, North, South

29. What quantity of heat is required to raise the temperate of 100 gram of water from  $20^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ ? ( $C = 4200 \text{ J/kg } ^{\circ}\text{C}$ )

- A. 12,600J      B. 42,000J      C. 29,400J      D. 21,000J

30. In a hydraulic press the smaller piston has an area of  $8\text{cm}^2$  while the larger piston has an area of  $400\text{cm}^2$ . If a force of a 20N is applied on the smaller piston, what is the force on the larger piston?

- A. 5N      B. 2000N      C. 1000N      D. 100N

31. Mercury is selected in the construction of **except**

- A. Low density.      C. Very little lost by evaporation.

- B. Easy to observe. D. does not freeze due to cold weather.
32. Which of the following wire has greater resistance?  
A. Short and thick. B. Long and thin C. Long and thick. D. Short and wider.
33. When an object is heated, different effects will happen **except**  
A. Expands in its size. C. Increase in its temperature.  
B. Change in its state. D. Decrease in its mass.
34. The SI unit to measure the space occupied by a body is  
A.  $\text{cm}^3$  B.  $\text{m}^3$  C. l D. ml
35. Which of the following describes the dimension of energy?  
A.  $\text{ML}^2\text{T}^{-2}$  B.  $\text{ML}^2\text{T}^2$  C.  $\text{MLT}^2$  D.  $\text{M}^2\text{T}^2\text{L}^2$
36. A cylindrical container is filled with water to a depth of 6m. How much pressure is exerted on the base of the container? (Take  $g = \frac{10\text{m}}{\text{s}^2}$  and density of water  $= \frac{1000\text{kg}}{\text{m}^3}$ )  
A. 6 Pa B. 6,000 Pa C. 60,000 Pa D. 60 Pa
37. Atmospheric pressure of a certain region is 100 torr. What is this pressure in cmHg?  
A. 1000 B. 10 C. 0.1 D. 1
38. Which of the energy transfers takes place in an electrical stove?  
A. Electrical to chemical. C. Mechanical to chemical energy.  
B. Electrical to heat energy. D. Electrical to light energy.
39. The table below gives the value of first band, second band, multiplier and tolerance of different color coding resistors.

| Colors | 1 <sup>st</sup> band | 2 <sup>nd</sup> band | Multiplier | tolerance    |
|--------|----------------------|----------------------|------------|--------------|
| Red    | 2                    | 2                    | $10^2$     | $\pm 2\%$    |
| Orange | 3                    | 3                    | $10^3$     | $\pm 3\%$    |
| Green  | 5                    | 5                    | $10^5$     | $\pm 0.5\%$  |
| Blue   | 6                    | 6                    | $10^6$     | $\pm 0.25\%$ |

Suppose the resistor has colors of orange, red, blue and red. What will be its magnitude?

A.  $65 \times 10^2 \Omega \pm 2\%$  B.  $32 \times 10^6 \Omega \pm 2\%$  C.  $32 \times 10^3 \Omega \pm 0.25\%$  D.  
 $2300 \Omega \pm 0.5\%$

40. A pulley system used to lift 400N load by applying 200N effort. If the effort moves through distance of 5m, the load raises a height of 1m, what is the efficiency of the machine? A. 2% B. 5% C. 400% D. 40%

41. Which the following types of forces exist between two objects if the objects are in contact with each other?

A. Magnetic force. B. Frictional force. C. Gravitational force. D. Electrostatic force.

42. Two forces  $F_1 = 40\text{ N}$  and  $F_2 = 60\text{ N}$  are acting on a body in opposite direction, what is the magnitude of the net force acting on a body?

A. 20N towards  $F_1$  B. 100N towards  $F_2$  C. 20N towards  $F_2$  D. 40N towards  $F_2$

43. By what factor lose the kinetic energy at a body changes if its velocity is doubled?

A. Decreased by one fourth.  
constant

C. Remains

B. Increased by four faster

D. decreased by  $\frac{1}{8}$

44. Which of the following is said to be absolute zero temperature?

A. - 273k B. 0k C. -460K D. 373k

45. Identify the effects of electric current employed to change mobile phone cells.

A. Magnetic

B. Heating

C. Sound

D. Chemicals

~~THE END~~

