

A

1 Which pair of physical quantities consist of two vectors?

- A) speed and acceleration
- B) power and momentum
- C) force and displacement
- D) mass and kinetic energy
- E) momentum and speed

2 Put the following substances in order from that with the lowest density to that with the highest density:

1. ice
2. mercury
3. steam
4. water

- A) 3 - 4 - 1 - 2
- B) 3 - 1 - 4 - 2
- C) 1 - 4 - 2 - 3
- D) 1 - 4 - 3 - 2
- E) 4 - 3 - 1 - 2

3 A 3-pin mains plug is fitted to the lead for a 1 kW electric kettle to be used on a 250-V a.c. supply, which of the following statements is not correct?

- A) The brown wire should be connected to the live side of the mains.
- B) The neutral wire is coloured blue.
- C) A 13-A fuse is the most appropriate value to use.
- D) The fuse should be fitted in the live lead.
- E) The yellow and green wire should be connected to the earth pin.

A

4 2 litre of gas at a temperature of 27 °C and pressure of 1 atmosphere is compressed to a volume of 1 litre and heated to 127 °C. What is the final pressure of the gas in atmosphere?

- A) 8/3
- B) 3/2
- C) 2/3
- D) 3/8
- E) 254/27

5

A 2 N load causes a 10 cm extension of spring. When two such identical springs are joined end-to-end to form one continuous spring and load 4 N is applied the new extension is

- A) 20 cm
- B) 5 cm
- C) 30 cm
- D) 10 cm
- E) 40 cm

6 A car travelling at 30 ms<sup>-1</sup> starts to brake when it is 50 m from a stationary lorry. The car moves in a straight line and manages to stop just before reaching the lorry. What is the deceleration of the car, in ms<sup>-2</sup>?

- A) 10
- B) 9
- C) 4.5
- D) 0.6
- E) 18

A

7 If an object is placed 21 cm from a converging lens the image formed is slightly smaller than the object. If the object is placed 19 cm from the lens the image formed is slightly larger than the object. The approximate focal length of the lens is

- A) 18 cm
- B) 10 cm
- C) 20 cm
- D) 5 cm
- E) 22 cm

8 Which of the following conditions is necessary for total internal reflection?

- I. The ray must go from a high dense medium to a low dense medium.
- II. The ray must come with a higher angle than critical angle.
- III. The ray must come with a lower angle than critical angle.

- A) Only I
- B) I and II
- C) I and III
- D) Only II
- E) All

A

9 Which of the followings definitely happen when the temperature of pure water at + 4<sup>0</sup> C is changed?

- I. Density decreases
- II. Mass stays same
- III. Volume increases

- A) I and II
- B) I and III
- C) Only II
- D) Only I
- E) All

10

The length of a metal rod is 100 cm and the linear expansivity of the metal is 0.000 02 K<sup>-1</sup>. By how many centimetre will it contract when cooled through 50 K?

- A) 0.100
- B) 0.150
- C) 0.50
- D) 1.001
- E) 0.001

11 Which of the following statements is definitely correct for a car moving at constant speed?

- I. The acceleration is zero.
- II. The magnitude of velocity is constant.
- III. The net force on the car is zero.

- A) I and III
- B) Only II
- C) I , II and III
- D) Only I
- E) Only III

A

- 12 If a fixed mass of water is cooled slowly from 10 °C to 0 °C, its volume
- A) Decreases steadily.  
B) First increases and then decreases.  
C) Increases steadily.  
D) First decreases and then increases.  
E) Remains unchanged.
- 13 What does the area under a velocity-time graph represent?
- A) Acceleration  
B) Displacement  
C) Velocity  
D) Speed  
E) Deceleration
- 14 A teacher can only hear sounds with frequencies between 30 Hz and 17 KHZ. What is the shortest wavelength of sound she can hear if the speed of sound in air is 340 ms<sup>-1</sup>?
- A) 2.0 x10<sup>-2</sup>m  
B) 11.3 m  
C) 8.82 x10<sup>-2</sup>m  
D) 1 x10<sup>-2</sup>m  
E) 20 m
- 15 Which of the following units is not unit of energy?
- A) kg.m<sup>2</sup>s<sup>-2</sup>  
B) kg.ms<sup>-1</sup>  
C) Watt.h  
D) N.m  
E) Joule

A

- 16 Which of the below quantities is not a base quantity?
- A) Length  
B) Mass  
C) Electric current  
D) Energy  
E) Time
- 17 A stone falls freely to a well in two seconds. What is the depth of the well?
- A) 80 m  
B) 15 m  
C) 40 m  
D) 20 m  
E) 60 m
- 18 One ampere is equivalent to
- A) one coulomb per second  
B) one ohm per second  
C) one volt per second  
D) one joule per second  
E) one watt per second
- 19 A man walks 8km towards north then he walks 8 km towards west. What is his average velocity if he finishes his walk in 2 hour s?
- A) 4√2 km/h  
B) 4 km/h  
C) 6 km/h  
D) 8 km/h  
E) 8√2 km/h

A

- 20 A ball is thrown vertically upwards with a speed of  $40\text{ms}^{-1}$ . What is the flight time of the ball?
- A) 6 seconds  
B) 4 seconds  
C) 2 seconds  
D) 8 seconds  
E) 10 seconds
- 21 A 700 W heater raises the temperature of some water from  $20\text{ }^{\circ}\text{C}$  to  $100\text{ }^{\circ}\text{C}$  in 10 min. If the specific heat capacity of water is  $4200\text{ J kg}^{-1}\text{ K}^{-1}$  and if heat losses neglected, the mass of water heated is
- A) 1 kg  
B)  $1/48\text{ kg}$   
C) 5 kg  
D)  $5/4\text{ kg}$   
E) 100 kg
- 22 A ray of white light is shone onto a glass prism. The light cannot be
- A) deviated  
B) focused  
C) dispersed  
D) reflected  
E) refracted

A

- 23 A measuring cylinder contains  $8\text{ cm}^3$  water. A small piece of brass of mass 24 g is lowered carefully into the measuring cylinder so that it is completely submerged. If the density of brass is  $8\text{ g cm}^{-3}$ , the new reading of the level of water in the cylinder is
- A)  $32\text{ cm}^3$   
B)  $11\text{ cm}^3$   
C)  $25/3\text{ cm}^3$   
D)  $5\text{ cm}^3$   
E)  $40\text{ cm}^3$
- 24 The manufacturers state that a car can accelerate from rest to  $24\text{ m/s}$  in 6 s. How far will the car travel from rest in 10 s with this acceleration?
- A) 144 m  
B) 40 m  
C) 200 m  
D) 120 m  
E) 240 m
- 25 Which of the following is the unit of pressure?
- A)  $\text{kgm}^{-1}\text{s}^{-2}$   
B)  $\text{kgm}^2\text{s}^{-3}$   
C)  $\text{kgms}^{-1}$   
D)  $\text{kgm}^2\text{s}^{-2}$   
E)  $\text{kgm}^{-3}$

A

26 The melting point of a solid is related to;

- I. Mass of solid  
II. Impurity of solid  
III Outside pressure

- A) II and III  
B) I and II  
C) Only II  
D) Only I  
E) Only III

27 What is the maximum height of the same ball?

- A) 60 m  
B) 40 m  
C) 80 m  
D) 120 m  
E) 90 m

28 Which of the following statements about the pressure at a point in a liquid is not correct?  
The pressure at a point in a liquid

- A) Increases with increasing density.  
B) Increases with increasing depth.  
C) Is greater vertically than horizontally.  
D) Acts equally in all directions.  
E) Varies with the value of the acceleration of free-fall.

A

29 The unit  $\sqrt{\frac{\text{joule}}{\text{kg}}}$  can be used for the quantity?

- A) Force  
B) Acceleration  
C) Power  
D) Velocity  
E) Pressure

30 The driver of car has a mass of 80 kg. When the car brakes sharply the deceleration of the car and driver is  $2.5 \text{ ms}^{-2}$ . The size of the total force exerted by the car seat and safety belt on the driver during braking is:  
(  $g = 10 \text{ ms}^{-2}$  )

- A) 600 N  
B) 200 N  
C) 320 N  
D) 825 N  
E) 1000 N

31 Which of the following quantities is not a vector?

- A) displacement  
B) weight  
C) torque  
D) electric current  
E) pressure

A

32 A ball of mass 0.2 kg is attached to a string and swung in a vertical circle of radius 0.5 m. What is the tension, in N, in the string when the ball passes through its lowest point at a speed of  $5 \text{ ms}^{-1}$ ? ( $g = 10 \text{ m/s}^2$ )

- A) 2
- B) 8
- C) 10
- D) 12
- E) 16

33

How do the frequency and wavelength change when waves in a ripple tank pass through a narrow gap in a barrier?

Frequency      Wavelength

- A) increase      increase
- B) decrease      unchanged
- C) decrease      increase
- D) increase      decrease
- E) unchanged      unchanged

34 Which of the following describes particles in a solid at room temperature?

- A) Close together and moving around at random
- B) Close together and stationary
- C) Far apart and stationary
- D) Close together and vibrating
- E) Far apart and moving around at random

A

35 Which of the following diseases is caused by bacteria

- A) mumps
- B) hepatitis
- C) influenza
- D) cholera
- E) AIDS

36 Which statement is false

- A) DNA is composed of a single chain
- B) DNA can replicate itself
- C) DNA is composed of nucleotides
- D) Four types of bases are found in DNA
- E) DNA forms a double helix

37 Which of the following is not involved with chemical digestion?

- A) Digestive juices from the liver
- B) Digestive juices from the pancreas
- C) Digestive juices in the stomach
- D) Saliva
- E) None of the above

38 Which of the following does not represent a genotype

- A) Tt
- B) brown eyes
- C) a heterozygous pea plant
- D) homozygous recessive
- E) none of the above

A

39 A couple both heterozygous for tongue rolling get married choose the incorrect possibility of their children.

- A) 1/4 non tongue roller
- B) 3/4 tongue roller
- C) 1/4 tongue roller
- D) 1/4 homocygous tongue roller
- E) all of the above

40 Choose the incorrect statement below

- A) Platelets are tiny bits of cells
- B) Immunity to a disease can only be gained by vaccination
- C) Lymph consists of plasma and white blood cells
- D) Stomach acid is part of the bodys natural defences
- E) Oxygenated blood has a brighter colour than deoxygenated blood

41 Which of the following take place when breathing in

- A) Intercostal muscles contract and diaphragm moves downwards
- B) Diaphragm moves up wards and air is inhaled
- C) Ribcage moves outwards and upwards and intercostal muscles relax
- D) Ribcage moves downwards and inwards and intercostal muscles relax
- E) Diaphragm moves upwards and intercostal muscles relax

A

42 Which statement is incorrect for meiosis

- A) It produces haploid cells
- B) Involves 2 divisions
- C) Produces gametes
- D) Four cells are produced from a single cell
- E) Produces identical daughter cell

43 The number of electrons in ion  $X^{-3}$  ion is equal to the number of electrons of argon. What is the name of this element?

- A) Phosphorus
- B) sulphur
- C) nitrogen
- D) Aliminium
- E) oxygen

44 ..... makes up almost of the atoms mass

- A) Nucleus
- B) Electron
- C) Proton
- D) Neutron
- E) All of the above

45 Which is correct for on ion which has a charge of -3

- A) It has 3 valence electrons
- B) It has 3 protons
- C) It has lost 3 electrons
- D) It is in group 3
- E) None of the above

**A**

**46 Isotopes**

- A) have different number of protons
- B) have the same atomic and mass numbers
- C) have the same number of neutrons but different number of protons
- D) have the same number of protons and neutrons
- E) have the same atomic but different mass numbers

**47 Which element is odourless and colourless?**

- A) Ar
- B) c
- C) s
- D) ca
- E) F

**48 Which element below is not found as a diatomic molecule?**

- A) hydrogen
- B) oxygen
- C) nitrogen
- D) calcium
- E) chlorine

**49 Which is not a property of metals?**

- A) dull
- B) sonorous
- C) ductile
- D) malleable
- E) high melting point

**A**

**50 Who discovered neutrons?**

- A) Bohr
- B) Dalton
- C) Rutherford
- D) Chadwick
- E) None of the above

**TEST BİTTİ**

**CEVAPLARINIZI KONTROL EDİNİZ**