



Program :

Pre-Medical Group

Duration :

3 Hrs

Total Questions :

200

## Section : Physics

**1) Hadrons are the particles that experience**

- (a). the strong nuclear force
- (b). the weak nuclear force
- (c). only the gravitational force
- (d). only the electromagnetic force

**2) Mass differs from weight in that**

- (a). all objects have weight but some lack mass
- (b). weight is a force and mass is not
- (c). the mass of an object is always more than its weight
- (d). mass can be expressed only in the metric system

**3) If an 800N man hangs motionless from 4 vertical strands of rope, then the tension in each strand of rope is**

- (a). 0 N
- (b). 200 N
- (c). 400 N
- (d). 800 N

**4) The work done by non-conservative force around a closed path is**

- (a). not zero
- (b). zero
- (c). maximum
- (d). minimum

**5) The force  $F$  applied to two bodies yields a work  $W$  and  $2W$  respectively. The distance covered by two bodies is:**

- (a).  $d, d$
- (b).  $d, 2d$
- (c).  $2d, d$
- (d).  $d, d/2$

**6) Light with an intensity of  $1 \text{ kW/m}^2$  falls normally on a surface and is completely reflected. The radiation pressure is**

- (a).  $1 \text{ kPa}$
- (b).  $3 \times 10^{11} \text{ Pa}$
- (c).  $1.7 \times 10^{-6} \text{ Pa}$
- (d).  $6.7 \times 10^{-6} \text{ Pa}$

**7) A tuning fork A of frequency  $256 \text{ Hz}$  produces 3 beats/sec with another tuning fork B, The frequency of tuning fork B is**

- 
- (a).  $256$
  - (b).  $253$
  - (c).  $256 \pm 3$
  - (d).  $259$

**8) Hadrons are the particles that experience**

- (a). the strong nuclear force
- (b). the weak nuclear force
- (c). only the gravitational force
- (d). only the electromagnetic force

**9) Suitable units for the gravitational constant  $G$  are**

- (a).  $\text{kg.m/s}^2$
- (b).  $\text{kg.m/s}$
- (c).  $\text{N.m/s}$
- (d).  $\text{m}^3/(\text{kg.s}^2)$

**10) Mass differs from weight in that**

- (a). all objects have weight but some lack mass
- (b). weight is a force and mass is not
- (c). the mass of an object is always more than its weight
- (d). mass can be expressed only in the metric system

**11) A lamp of 100 W at 200 V is supplied current at 100 volts. It will be equivalent to the lamp of**

- (a). 50 W
- (b). 40W
- (c). 25W
- (d). 10W

**12) By keeping moment of inertia of a body constant, if we double the time period, then angular momentum of body \_\_\_\_**

- (a). Remains constant
- (b). Becomes half
- (c). Doubles
- (d). Quadruples

**13) The Voice Frequency (VF) range is**

- (a). 30 Hz to 300 Hz
- (b). 300 Hz to 3 kHz
- (c). 3 kHz to 30 kHz
- (d). 9 kHz to 540 kHz

## **Section : Chemistry**

**14) The reaction of an aldehyde or a ketone with a primary amine forms**

- (a). an imine
- b). a semicarbazone.
- (c). Schiff base.
- (d). Both 1 and 3

**15) Carbinolamines dehydrate to give**

- (a). Substituted aldehydes
- (b). Substituted amines
- (c). Substituted imines
- (d). Substituted alcohols

**16) What do we call to the sudden expansion of plasma?**

- (a). Avogadro's law
- (b). Grahams law of diffusion

- (c). Joule Thompson effect
- (d). Daltons law of partial pressure

**17) Device that measures heat flow is called**

- (a). Amperemeter
- (b). Barometer
- (c). Polarimeter
- (d). Calorimeter

**18) If we add HNO<sub>3</sub> to the original vanadium solution it produces**

- (a). blue ions
- (b). green ions
- (c). dull grey blue ions
- (d). pink ions

**19) What happens when an aldehyde is treated with lithium aluminum hydride?**

- (a). Primary alcohol is formed
- (b). Secondary alcohol is formed
- (c). Tertiary alcohol is formed
- (d). No reaction

**20) Which of the following is the simplest member of organic compounds?**

- (a). Formic acid
- (b). Formaldehyde
- (c). Methane
- (d). Methanol

## **Section : General Arithmetic**

**21) For what value of  $k$  will equation  $x^2 - kx + 4 = 0$ , have sum of roots equal to product of roots?**

- (a). 3
- (b). - 2
- (c). - 4
- (d). 4

**22) A Set having only one element is called**

- (a). an empty set
- (b). universal set
- (c). A singleton set
- (d). A power set

**23) The ordered pairs(a,b) and (a,d) are equal if and only if**

- (a).  $b=d$
- (b).  $b=c$
- (c).  $b=a$
- (d).  $a=d$

**24) The symbol which is used to denote negation of a proposition is**

- (a).  $\sim$
- (b).  $-+$
- (c).  $\wedge$
- (d).  $\vee$

**25) A square matrix  $A = \{a_{ij}\}$  is lower triangular matrix when.....**

- (a).  $a_{ij} = 0$  for all  $i < j$
- (b).  $a_{ij} = 0$  for all  $i > j$
- (c).  $a_{ij} \neq 0$  for all  $i < j$
- (d).  $a_{ij} \neq 0$  for all  $j < i$

## Section : English

**26) Antonym of myopic is:**

- (a). Short Sighted
- (b). Feeble Minded

(c). Fore Sighted

(d). Long Sighted

**27) A person who constantly calls attention to his trials and sufferings is in danger of developing a martyr complex and impressing others that he is\_\_\_\_\_seeking sympathy.**

(a). Consciously

(b). Willingly

(c). Purposefully

(d). Emphatically

**28) Although her report on the effects of electromagnetic radiation was lengthy, the presentation she \_\_\_\_\_ rather succinct.**

(a). held was

(b). held

(c). is held

(d). was held