

**VGR COACHING CENTER****CLASS - X****SCIENCE-PHYSICS****MARK-****75****PART-A****CHOOSE THE COORECT ANSWER**

1. Newton's III law is applicable
  - a) for a body is at rest b) for a body in motion c) both a & b d) only for bodies with equal masses
2. One kilogram force equals to
  - a) 9.8 dyne b)  $9.8 \times 10^4 \text{N}$  c)  $98 \times 10^4 \text{ dyne}$  d) 980 dyne
3. The eye defect 'presbyopia' can be corrected By
  - a) convex lens b) concave lens c) convex mirror d) Bi focal lenses
4. A convex lens forms a real, diminished point sized image at focus. Then the position of the object is at
  - A) focus b) infinity c) at  $2f$  d) between  $f$  and  $2f$
5. Temperature is the average \_\_\_\_\_ of the molecules of a substance
  - A) difference in K.E and P.E                      b) sum of P.E and K.E
  - c) difference in T.E and P.E                      d) difference in K.E and T.E
6. In a simple circuit, why does the bulb glow when you close the switch?
  - a) The switch produces electricity. b) Closing the switch completes the circuit.
  - c) Closing the switch breaks the circuit. d) The bulb is getting charged.
7. The frequency, which is audible to the human ear is
  - a) 50 kHz b) 20 kHz c) 15000 kHz d) 10000 kHz
8. The sound waves are reflected from an obstacle into the same medium from which they were incident. Which of the following changes?
  - a) speed b) frequency c) wavelength d) none of these
9. Unit of radioactivity is \_\_\_\_\_
  - a. roentgen b. curie c. becquerel d. all the above
10. \_\_\_\_\_ isotope is used for the treatment of cancer.

a. Radio Iodine b. Radio Cobalt c. Radio Carbon d. Radio Nickel

11. \_\_\_\_\_ aprons are used to protect us from gamma radiations

a. Lead oxide b. Iron c. Lead d. Aluminium

12. Kamini reactor is located at \_\_\_\_\_

a. Kalpakkam b. Koodankulam c. Mumbai d. Rajasthan

### PART-B

#### WRITE ANY SEVEN QUESTIONS

#### Q.NO.20 IS COMPULSORY

13. Differentiate mass and weight

14. State Newton's second law.

15. State Snell's law.

16. Define one calorie

17. Column - I Column - II

(i) electric current (a) volt

(ii) potential difference (b) ohm meter

(iii) specific resistance (c) watt

(iv) electrical power (d) joule

(v) electrical energy (e) ampere

18. An object is placed at a distance 20cm from a convex lens of focal length 10cm.

Find the image distance and nature of the image.

19. Name three animals, which can hear ultrasonic vibrations.

20.  $^{88}\text{Ra}226$  experiences three  $\alpha$  - decay. Find the number of neutrons in the daughter element.

20. Define one roentgen.

21. Define electric potential and potential difference.

### PART-C

#### WRITE ANY SEVEN QUESTIONS

#### Q.NO 30 IS COMPULSORY

22. Describe rocket propulsion.

23. What are the types of inertia? Give an example for each type.
24. a . The ratio of masses of two planets is 2:3 and the ratio of their radii is 4:7 Find the ratio of their accelerations due to gravity.  
b. Give the applications of universal law gravitation
25. a .List out the properties of light  
b. A beam of light passing through a diverging lens of focal length 0.3m appear to be focused at a distance 0.2m behind the lens. Find the position of the object.
26. What is meant by electric current? b) Name and define its unit. c) Which instrument is used to measure the electric current? How should it be connected in a circuit?
27. A torch bulb is rated at 3 V and 600 mA. Calculate it's  
a) power  
b) resistance  
c) energy consumed if it is used for 4 hour.
28. Identify A, B, C, and D from the following nuclear reactions.  
(i)  $^{13}\text{Al}^{27} + \text{A} \rightarrow ^{15}\text{P}^{30} + \text{B}$   
(ii)  $^{12}\text{Mg}^{24} + \text{B} \rightarrow ^{11}\text{Na}^{24} + \text{C}$   
(iii)  $^{92}\text{U}^{238} + \text{B} \rightarrow ^{93}\text{Np}^{239} + \text{D}$
29. Differentiate the eye defects: Myopia and Hypermetropia
30. Distinguish between the resistivity and conductivity of a conductor
31. a. . A beam of light passing through a diverging lens of focal length 0.3m appear to be focused a distance 0.2m behind the lens. Find the position of the object.  
b. Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.

### SEVEN MARK QUESTION

#### WRITE ANY 3

1. A. Differentiate convex lens and concave lens.  
b. Explain the rules for obtaining images formed by a convex lens with the help of ray diagram.

OR

- a. State Joule's law of heating.
  - b An alloy of nickel and chromium is used as the heating element. Why?
  - c. How does a fuse wire protect electrical appliances?
2. What is an echo?
    - a) State two conditions necessary for hearing an echo.
    - b) What are the medical applications of echo?
    - b) How can you calculate the speed of sound using echo?
  3. Write any three features of natural and artificial radioactivity.  
Compare the properties of alpha, beta and gamma radiations.

OR

4. Mr. Ramu is working as an X - ray technician in a hospital. But, he does not wear the lead aprons. What suggestion will you give to Mr. Ramu?  
State the universal law of gravitation and derive its mathematical expression  
State three uses of ultrasonic vibrations.

**PREPARED BY**

**G. RAJA M.E**

**VGR COACHING CENTER**

**INJAMBAKKAM**

**8667090042**

**8056141468**

