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Questions:

Problems

1. Inian and Ezhilan argue about the light year. Inian tells that it is 9.46×10^{15} m and Ezhilan argues that it is 9.46×10^{12} km. Who is right? Justify your answer.
2. The main scale reading while measuring the thickness of a rubber ball using Vernier caliper is 7 cm and the Vernier scale coincidence is 6. Find the radius of the ball.
3. Find the thickness of a five rupee coin with the screw gauge, if the pitch scale reading is 1 mm and its head scale coincidence is 68.
4. Find the mass of an object weighing 98 N.
5. If a man has a mass 50 kg on the earth, then what is his weight?

7 Marks

6. Explain a method to find the thickness of a hollow tea cup.
7. How will you find the thickness of a one rupee coin?

Assertion and reason

8. Assertion(A): The scientifically correct expression is " The mass of the bag is 10 kg"
   Reason (R): In everyday life, we use the term weight instead of mass
   (a) Both A and R are true but R is not the correct reason
   (b) Both A and R are true and R is the correct reason
   (c) A is true but R is false
   (d) A is false but R is true
9. Assertion (A): 0 °C = 273.16 K. For our convenience we take it as 273 K after rounding off the decimal
   Reason (R): To convert a temperature on the Celsius scale we have to add 273 to the given temperature
   (a) Both A and R are true but R is not the correct reason
   (b) Both A and R are true and R is the correct reason
   (c) A is true but R is false
   (d) A is false but R is true
10. Assertion (A): Distance between two celestial bodies is measured in terms of light year
    Reason (R): The distance travelled by the light in one year is one light year
    (a) Both A and R are true but R is not the correct reason
    (b) Both A and R are true and R is the correct reason
    (c) A is true but R is false
    (d) A is false but R is true

Match the following

11. Length
12. Mass
13. Time
14. Temperature
15. Screw gauge
16. Vernier caliper
17. Beam balance
18. Digital balance

4 Marks

19. Write the rules that are followed in writing the symbols of units in SI system.
20. Write the need of a standard unit.
21. Differentiate mass and weight.
22. How will you measure the least count of vernier caliper?

2 Marks

23. Define measurement
24. Define standard unit.
25. What is the full form of SI system?
26. Define least count of any device.
27. What do you know about pitch of screw gauge?
28. Can you find the diameter of a thin wire of length 2 m using the ruler from your instrument box?

True or False

29. With the help of vernier caliper we can have an accuracy of 0.1 mm and with screw gauge we can have an accuracy of 0.01 mm.
    (a) True (b) False

Fill in the blanks

30. Metre is the unit of _____
31. 1 kg of rice is weighed by _____

32. Thickness of a cricket ball is measured by _____

33. Radius of a thin wire is measured by _____

34. A physical balance measures small differences in mass up to _____.

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