**Chapter 10**

**Work and Energy**

1. A child feels that he has done lot of work in last 1hour for he has read 10 pages of a book, but according to science he has done zero work, justify.
2. What are the factors on which work done depends?
3. There are two identical boxes A and B which are being pushed by boys using similar force but the distance covered by box A is 4 feet while the other box B covers a distance of 6 feet. Suggest in which case the work done is more and why?
4. Fill in the blanks
5. The work done by \_\_\_\_\_\_\_\_ depends on \_\_\_\_\_\_\_\_\_ of force applied.
6. The capacity to do work is \_\_\_\_\_\_\_\_\_\_.
7. The most common form of energy is \_\_\_\_\_\_\_\_\_\_\_.
8. The energy possessed by an object due to its position or height is \_\_\_\_\_\_\_\_\_ energy.
9. Object posses kinetic energy due to its \_\_\_\_\_\_\_\_\_\_\_\_.
10. Sound is energy produced when an object \_\_\_\_\_\_\_\_\_\_\_\_.
11. \_\_\_\_\_\_\_ energy of Sun is used by plants to make their \_\_\_\_\_\_\_.
12. \_\_\_\_\_\_\_\_\_\_\_\_ can change light energy to electricity.
13. Energy can neither be \_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_.
14. State whether given statements are true/false
15. A moving object does not possess energy.
16. Heat is one of the most common forms of energy.
17. Wood, coal, diesel have chemical energy stored in them.
18. Tube lights, electric bulbs and LED’s are not man-made sources of light.
19. A moving ball hitting another ball at rest, can cause the latter to move.
20. Define the following terms
21. Work
22. Energy
23. Kinetic energy
24. Displacement
25. Potential energy
26. Multiple choice question
27. \_\_\_\_\_\_\_\_\_ is said to be done when force acting on body produces displacement.
28. Work b) Energy c) Force d) None
29. Solar energy changes light energy to \_\_\_\_\_\_\_\_\_\_\_\_.
30. Sound b) electricity c) Chemical d) none
31. \_\_\_\_\_\_\_\_\_\_ is form of energy produced when an object vibrates.
32. Chemical b) Sound c) Heat d) Light
33. Moving ball has \_\_\_\_\_\_\_\_\_\_ energy
34. Potential b) Kinetic c) Chemical d) Electricity
35. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is man- made sources of light.
36. Lasers b) Sun c) Geyser d) none
37. Give reasons for the following
38. The battery enables the radio to play music.
39. When we push a tree it is said no work is done.
40. We can neither create energy nor destroy energy.
41. Plastic sheet breaks into smaller pieces when hit by hammer.
42. How are work and energy related to each other?
43. When do we say that an object has mechanical energy?
44. Name the kind of energy present
45. When stone falls on earthen pot
46. A log moving in a flowing river
47. Formation of steam on boiling water
48. Energy stored in a battery
49. Striking of drum with drumsticks
50. Sunlight
51. What do you understand by principle of conservation of energy?
52. How is kinetic energy different from potential energy?
53. State the different forms of energy.
54. Give 2 examples where one form of energy gets converted into another form.
55. A vertical force does not do work on a horizontally displaced object, why?
56. If there are two objects A and B. A has 50kg mass and B has 100kg mass and both of them are pushed through equal distance and work done in case is double that is done in case of A.

Will the force applied in both the cases be same or not and give reason for it.

1. A ball is thrown with great force it moves at very fast rate and comes to rest after some time.
2. Name the energy moving ball has
3. Name the energy ball has when it comes to rest.
4. What kind of energy is produced when a matchstick strikes against a match box? And what is produced when a match stick produces a spark?
5. Write an activity which shows heat is form of energy that can be used to move objects.

**Chapter 11**

**Electric Currents and Circuits**

1. The student should look around in their house and list down at least 5 devices/ appliances running on electricity used by them on daily basis. And also state the source of electricity.
2. Fill in the blanks
3. \_\_\_\_\_\_\_\_\_\_ is perhaps the most convenient and widely used form of energy.
4. When we press the switch of an electric torch electricity flows from the \_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_\_\_.
5. Electric cells are devices that produce electricity from metals and \_\_\_\_\_\_\_\_\_\_\_ stored and arranged.
6. A combination of \_\_\_\_\_\_\_\_\_\_\_ is known as a battery.
7. The electric cells in the wrist watch are known as\_\_\_\_\_\_\_\_\_\_\_.
8. \_\_\_\_\_\_\_\_ lamps have a long life and low power consumption.
9. We need minimum of \_\_\_\_\_\_ elements even in the simplest of electric circuit.
10. The \_\_\_\_\_\_\_\_is the symbol of lamp /bulb.
11. Plastics, wood and Bakelite are good \_\_\_\_\_\_\_\_\_.
12. Never try to \_\_\_\_\_\_\_ with or open an electrical appliance when connected to mains.
13. State whether given statements are true /false
14. The switch ON position breaks or opens the circuit.
15. The CFLs can give same light as an electric bulb by consuming much less power.
16. When there is flow of electricity through a wire or a device then we say electric current is flowing.
17. A combination of battery is known as the cell.
18. Never touch electrical connections with wet or bare hands.
19. Multiple choice questions
20. Which one is good conductor of electricity?
21. Wood b) Plastic c) graphite d) none
22. The gas present in the bulb is
23. Oxygen b) Carbon dioxide c) Carbon monoxide d) Inert gas
24. A dry cell has \_\_\_\_\_\_\_\_\_ terminal
25. Two b) Three c) Four d) One
26. Which one the general precautions that should be followed while using electricity?
27. Never touch electrical connections with wet or bare hands. b) Never fiddle with, or open electrical appliances when connected to mains. c)Good idea to use rubber gloves or rubber soled shoes while working with electrical devices. d) All the points mentioned.
28. Match the following

|  |  |
| --- | --- |
| Column A | Column B |
| Conductors | Compact Florescent Lamps |
| Insulators | Breaks or completes the circuit |
| Switch | Wood, Bakelite |
| CFL | Metal, Graphite |

1. Define the following terms
2. Conductors
3. Insulators
4. Electric circuit
5. Battery
6. Cell
7. Give reasons for the following
8. We should never touch electrical devices with wet hands
9. We should wear rubber gloves and sandals while repairing electrical appliances.
10. The bulb may not glow even when the circuit is complete.
11. Nowadays the LED’s are being increasingly used as light source
12. Inside of the electric bulb is filled with inert gases like argon or nitrogen and not oxygen.
13. State 5 precautions person should take using electricity and electrical appliances.
14. What is an electric circuit? Draw a circuit using 3 basic components
15. Draw a labelled diagram of torch
16. Why the electric bulb in a torch is kept at the focus of concave mirror?
17. How many terminals does a dry cell have and which part of the cell act as terminal?
18. Differentiate between primary cells and secondary cells.
19. What is the purpose of the filament present in an electric bulb?
20. Name 4 devices or appliances where cells are used as source of electricity.
21. Classify the given substances as conductors and insulators—Copper, aluminium, wood , Bakelite, Graphite, Silver, gold . After classifying suggest why some of them are said to be insulators?
22. Why is better to be safe than sorry?
23. Complete the given table

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | S.N | Name of the device/part of circuit | Symbol used in the Circuit | | 1 | Cell |  | | 2 | Battery |  | | 3 | Connecting Wire |  | | 4 | Bulb/ Lamp |  | | 5 | Electric switch |  | |

1. What is the purpose of switches in an electric circuit?
2. How is an open circuit different from a closed circuit?
3. How can we save ourselves from electrical shocks or electricity related accidents?
4. What happens when the bulb gets fused?
5. Why is the use of symbol required for drawing an electrical circuit?