SCIENCE

GRADE 10

MULTIPLE

CHOICE

REVIEW

TECHNOLOGY

1. A washing machine contains many parts that may break down over time. What would be the best system to attach the back cover to the body of the washing machine to permit access for repairs.

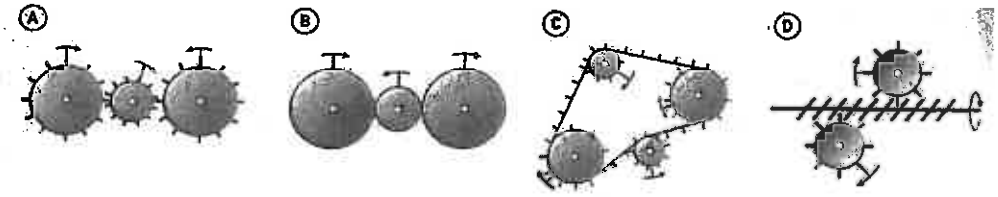
A) rivet

B) glue (adhesive)

C) screw

D) nail

2. Which of the following diagrams of a motion transmission system correctly illustrates the motion of the components?



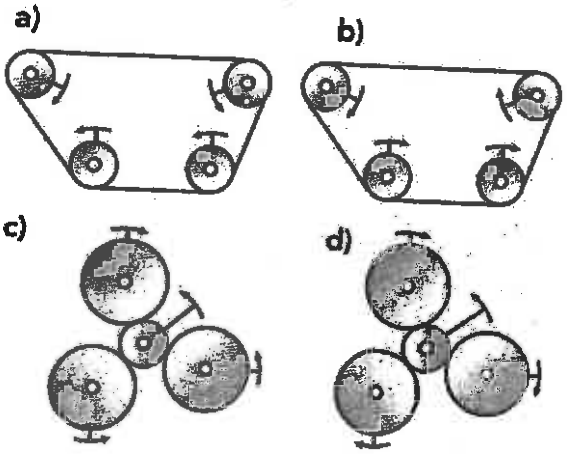
A) I and II only

B) II and III only

C) III and IV only

D) II, III and IV

3. Which of the following diagrams of a motion transmission system correctly illustrates the motion of the components?



A) I and II only

B) II and III only

C) II and IV only

D) I and III only

4. A cam and follower system transforms the rotational motion of a cam into the reciprocating translational motion of a follower. Which cam below would not allow for both clockwise and counter-clockwise motion?

A) 

B) 

C) 

D) 

5. A student wishes to build a pull toy of a clown sitting in a cart in which a mechanism will cause the hat of the clown to move up and down as the cart is pulled.

Which one of the systems below would not be suitable for a mechanism in this toy?

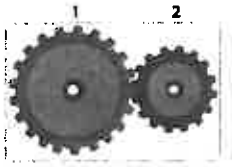
A) Crank and slide

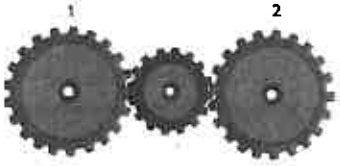
B) Cam and follower

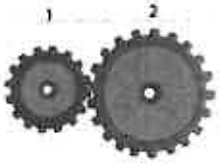
C) Rack and pinion

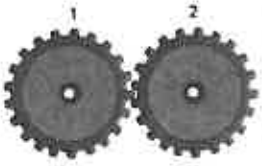
D) Crank, connecting rod, and slide

6. For which of the systems below will the Gear 2 turn more quickly than the Gear 1?

A) 

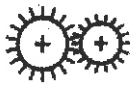
B) 

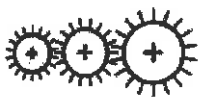
C) 

D) 

7. Which of the systems below could produce a change in speed similar to the one in a wheel and worm gear system?

A) Two pulleys of equal size connected by a belt 

B) A large driver gear turns a smaller driven (receptor) gear 

C) A small driver gear turns a middle size intermediary gear which turns a large driven (receptor) gear 

D) A rack and pinion system where the pinion is the driver and the rack is the driven (receptor). 

8. A circuit has many components. Which of the following components generates electrical current?

A) Power supply

B) Ammeter

C) Voltmeter

D) Switch

9. A battery is a power source used in everyday objects. Which of the following objects does not use a chemical battery as a power supply?

A) Flashlight

B) Portable speakers

C) Toaster

D) Laptop

10. A piezoelectric quartz watch uses the vibration of crystals to keep track of time. Which type of energy transformation occurs in this system?

A) Chemical energy into electrical energy

B) Solar energy into electrical energy

C) Magnetic energy into electrical energy

D) Mechanical energy into electrical energy

11. Conduction plays an important part in an electrical circuit. Which of the following does NOT describe conduction?

A) The flow of current through a switch

B) The flow of current through a wire

C) The flow of electrons through a wire

D) The ability to prevent the current from flowing

12. Insulators are used in electronic toys. What material could a manufacturer use to insulate a part of a toy?

1. Plastic
2. Ceramic
3. Metal
4. Cardboard
5. Glass

A) 1, 2, and 4 B) 1, 2, and 5 C) 1, 2, 4, and 5 D) 1, 2, 3, 4, and 5

13. Fuses and breakers are used in all buildings. What is the function of a fuse and breaker?

A) Control the flow of the current

B) Prevent the current from flowing

C) Automatically cut the current

D) Allow the current to flow in a circuit

14. The conductivity of a wire in an electrical toy needs to be decreased. How should the electrical engineers change the wire?

1. Increase the length
2. Increase the diameter
3. Decrease the length
4. Decrease the diameter

A) 1 and 2 B) 1 and 4 C) 2 and 3 D) 2 and 4

15. Controls play an important role in electrical engineering. Which of the following statements about control is false?

A) A control is another word for switch

B) A control regulates the electrical current in a circuit

C) A control can be open or closed

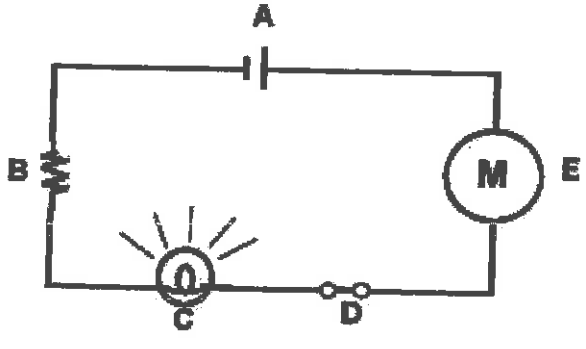
D) A control regulates the speed of electrons in a circuit

16. In which of the situations below is current flowing through the circuit?

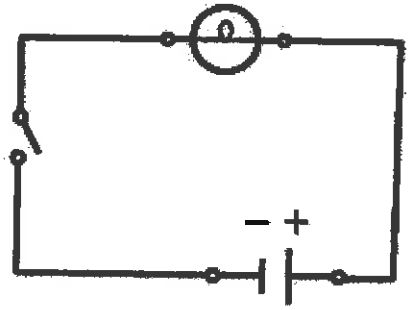
1. The magnetic switch is closed in the presence of a magnetic field
2. The magnetic switch is open in the presence of a magnetic field
3. The flip-flop switch is closed in a circuit.
4. The flip-flop switch is open in a circuit.

A) 1 and 3 B) 1 and 4 C) 2 and 3 D) 2 and 4

17. Which of the following circuit components is a control?



1. Which of the following components of a circuit transforms energy?



(18)

1. light
2. switch
3. battery
4. wires

A) 2 and 4 B) 1 and 3 C) 1, 2, and 3 D) 1, 3, and 4

B

(19)

1. A fan is designed to transform electrical energy to:
   A) Sound energy
   B) Mechanical energy
   C) Thermal energy
   D) Light energy

B

1. The following image is an example of what type of constraint?

A) Compression
B) Torsion
C) Deflection
D) Tension

2. The following image is an example of what type of constraint?

A) Compression
B) Torsion
C) Deflection
D) Tension