



## RAMAGYA SCHOOL, NOIDA

X/SCIENCE/ 2017-18

### OLYMPIAD PRACTICE WORKSHEET

Tick the correct options :

1. A magnetic field can exert force on  
(a) a moving magnet (b) stationary magnet (c) moving charge (d) all of these
2. Magnetic lines of force  
(a) have more directions  
(b) have no physical reality  
(c) can be used to indicate the direction of the magnetic field of a point  
(d) all the above
3. When is the back emf of an electric motor the greatest?  
(a) when the motor is switched on  
(b) when the motor is speeding up  
(c) when the motor is at maximum speed  
(d) when the motor is slowing down
4. According to international convention of color coding in a wire  
(a) live is red, neutral is black and earth is green  
(b) live is brown, neutral is blue and earth is green  
(c) live is brown, neutral is green and earth is black  
(d) live is red, neutral is yellow and earth is blue
5. An electric current can be produced in a closed loop  
(a) by connecting it to a battery, but not by moving a magnet near it  
(b) by moving a magnet near it, but not by connecting it to a battery  
(c) by connecting it to a battery, as well as by moving a magnet near it  
(d) neither by connecting it to battery nor by moving a magnet near it
6. Which of the following describes the common domestic power supplied in India?  
(a) 220V, 100Hz (b) 110V, 100Hz  
(c) 220V, 50Hz (d) 110V, 50Hz
7. Magnetic field due to a current carrying straight wire depends on  
(a) current only (b) distance from the wire only  
(c) both a) and (b) (d) none
8. The direction of the magnetic field produced by a current carrying straight conductor can be found using  
(a) right hand thumb rule (b) right hand Fleming's rule  
(c) left hand Fleming's rule (d) right hand screw rule

9. A rectangular coil of copper wires is rotated in a magnetic field. The direction of the induced current changes once in each

(a) two revolutions (b) one revolution (c) half revolution (d) one-fourth revolution

10. Electric motor

(a) is based on electromagnetic induction (b) converts kinetic energy into electrical energy  
(c) converts electrical energy into kinetic energy (d) none

11. To convert an AC generator into a DC generator

(a) split ring type commutator must be used (b) slip rings and brushes must be used  
(c) a stronger magnetic field has to be used (d) a rectangular wire loop has to be used

12. Choose the incorrect statement

(a) The direction of magnetic field at a point is taken to be the direction in which the north pole of a magnetic compass needle points  
(b) magnetic field lines are closed curves  
(c) If magnetic field lines are parallel and equidistant, they represent zero field strength  
(d) relative strength of magnetic field is shown by the degree of closeness of the field lines.

13. Force on a current conductor in a magnetic field depends on

(a) length of the conductor (b) current in the conductor  
(c) magnitude of the magnetic field (d) all of these

14. Magnetic field inside a solenoid is

(a) non-uniform (b) circular  
(c) uniform (d) none

15. Magnetic field lines due to a bar magnet are similar to those of a

(a) current-carrying straight wire (b) solenoid (c) two parallel wires (d) none

16. Pointing to a man in a photograph, a woman said, "His brother's father is the only son of my grandfather." How is the woman related to the man in the photograph?

a) Sister                      b) Aunt                      c) Grandmother                      d) Daughter

17. The food is stored in which form in leaves?

(a) Glucose                      (b) Fructose                      (c) Glycogen                      (d) Starch

18. How many pairs of letters in the word 'CHAIRS' have as many letters between them in the word as in the alphabet?

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

19. How many 4's are there preceded by 7 but not followed by 3?

5 9 3 2 1 7 4 2 6 9 7 4 6 1 3 2 8 7 4 1 3 8 3 2 5 6 7 4 3 9 5 8 2 0 1 8 7 4 6 3

A) Four

B) Three

C) Six

D) Five

20. 'Soldier' is related to 'Army' in the same way as 'Pupil' is related to .....

(A) Education

(B) Teacher

(C) Student

(D) Class