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X/SCIENCE/2017-18  
OLYMPIAD PRACTICE WORKSHEET

- Q 1.** Vinay starts walking towards East. After walking 35 km, he turns to his right and walks another 40 km. He then turns right and walks another 35 km. Finally, he turns right and walks 20 km. How far is he from the starting point and in which direction?  
(A) 20 km, North      (B) 35 km, South      (C) 20 km, South      (D) 35 km, North
- Q 2.** Eight friends P, Q, R, S, T, U, V and W are sitting around a circle facing the centre. V is third to the right of Q and is second to the left of R. Q is second to the left of T and on the immediate right of S. U is between Q and T. P is not on the left of R. Which of the following is the correct position of W?  
(A) On the immediate left of V      (B) On the immediate right of V  
(C) Between U and V      (D) On the immediate right of R
- Q 3.** The given question is based on the 5 three-digit numbers given below:  
517    394    823    976    465  
If the position of the first and the second digits in each of the above numbers are interchanged, which of the following will be the third digit of the highest number?  
(A) 7      (B) 4      (C) 3      (D) 6
- Q 4.** Pointing to a photograph, a woman says, "He is the only son of the wife of my husband's father". How is the man related to the woman?  
(A) Son      (B) Son-in-law      (C) Brother-in-law      (D) Husband
- Q 5.** Read the given statements and select the correct option. Statement 1 : A concave mirror and a convex lens both have the same focal length in air. When they are submerged in water, they will still have the same focal length. Statement 2 : The refractive index of water is greater than the refractive index of air.  
(A) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.  
(B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.  
(C) Statement 1 is true but statement 2 is false.  
(D) Statement 1 is false but statement 2 is true.
- Q 6.** No heat loss occurs during flow of charge in superconductors because  
(A) Speed of charge is slow in it      (B) It is a bad conductor of heat  
(C) It offers zero resistance      (D) It generates very small voltage.

**Q 7. Ganga action plan has been initiated to**

- a) Dredge and make the river better for water transport
- b) Increase fishery in the Ganges
- c) Clean excessive pollutants in Ganges water
- d) All of above

**Q 8. By which optical phenomenon, the splitting of white light into seven constituent colours occur?**

- (a) Refraction
- (b) Reflection
- (c) Dispersion
- (d) Interference

**Q 9. How do we know that fission isn't responsible for the Sun's energy ?**

- (A) Fission doesn't produce enough energy per gram of fuel.
- (B) If fission were going on in the Sun, the Sun would explode.
- (C) If fission were going on in the Sun, the Sun's mass would increase.
- (D) There isn't very much fissionable material in the Sun.

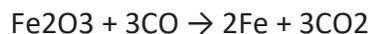
**Q 10. Which of the following statements is true with respect to diamond ?**

- (A) The carbon atoms are connected to each other by metallic bonds.
- (B) In the diamond crystal, the carbon atoms are very loosely packed.
- (C) Each carbon atom in the crystal is surrounded by four other carbon atoms forming a rigid 3-D structure.
- (D) Diamond can be synthesised by subjecting pure carbon to very low pressure and temperature.

**Q 11. Which of the following statements regarding natural selection is true?**

- (A) It is a process in which members of a population inherit traits that enable them to survive better and produce offspring.
- (B) It is based on the isolation of natural populations and selective breeding of organisms.
- (C) It provides diversity without any adaptation.
- (D) All of these

**Q 12. Which of the following statements about the given reaction are not correct?**



- I. Fe<sub>2</sub>O<sub>3</sub> is getting oxidised to Fe.
- II. Fe<sub>2</sub>O<sub>3</sub> is acting as a reducing agent.
- III. CO is acting as a reducing agent.
- IV. CO is getting reduced to CO<sub>2</sub>.

- (A) III only
- (B) I, II and IV
- (C) II and IV
- (D) I and III

**Q 13. Which phenomenon is responsible for the twinkling of stars?**

- (a) Atmosphere reflection
- (b) Atmosphere refraction

(c) Reflection

(d) Total internal reflection

**Q 14. In which of the following both covalent and ionic bonds are found-**

- a)  $\text{NH}_4\text{Cl}$
- b)  $\text{H}_2\text{O}$
- c)  $\text{CCl}_4$
- d)  $\text{CaCl}_2$

**Q 15. A compound contains 80% C and 20% H. Its molecular mass is 30, molecular formula of the compound is-**

- a)  $\text{CH}_3$
- b)  $\text{C}_3\text{H}_6$
- c)  $\text{C}_2\text{H}_6$
- d)  $\text{CH}$

**Q 16. Which of the following is not a saturated hydrocarbon?**

- a) Cyclohexane
- b) Benzene
- c) Butane
- d) Isobutene

**Q 17. The bond between two identical non-metallic atoms has a pair of electrons?**

- a) unequally shared between two atoms.
- b) transferred completely from one atom to another.
- c) with identical spins
- d) equally shared between them.

**Q 18. The change in focal length of an eye lens is caused by the action of the**

- (a) Pupil
- (b) Retina
- (c) Ciliary muscles
- (d) Iris

**Q 19. Sexual Reproduction can be grouped into -----distinct stages.**

- a. two
- b. three
- c. four
- d. five

**Q 20. In this method Parent cell divides into many daughter cells.**

- a. Fission
- b. Binary fission
- c. Multiple fission
- d. Budding