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NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION

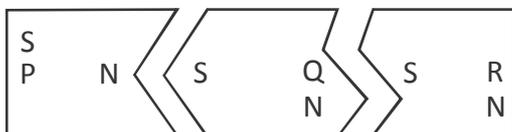
Solutions for Class : 6

MATHEMATICS

1. (B) A mixed fraction can be written as an improper fraction.
2. (C) $\Delta ABE, \Delta BEC, \Delta ABC, \Delta AED, \Delta EDC, \Delta ACD, \Delta ABD, \Delta BCD$ are there
3. (C) Shaded area = Total area – unshades area
 $= 4 \times 3 \text{ cm}^2 - 8 \times \frac{1}{2} \times 1 \times 1 \text{ cm}^2$
 $= 12 \text{ cm}^2 - 4 \text{ cm}^2 = 8 \text{ cm}^2$
4. (C) Except 'C' option remaining are not polygons.
5. (B) $x^2 + 12x + 36 = (x+6)^2$
 $\therefore x = 64 \quad x + 6 = 64 + 6 = 70$
 $\therefore (x+6)^2 = 70^2 = 4900$

PHYSICS

6. (B) If Q is the north pole, the poles at P and R are south pole and north pole respectively as shown below :



7. (D) All the bulbs must have their metal tip and metal casing connected to the other components in the circuit in order to light up. In option (D), the bulb at the top does not have its metal casing connected to the rest of the circuit, so electric current cannot flow through it to light it up.

8. (C) All the given functions are performed by the cap of a cell. The main function of a cap of a cell is to act as a positive terminal.
9. (B) P and T are unlike poles in a horse-shoe magnet that attract most of the paper clips.
10. (C) Figures shown in options (B) and (D) are not the correct ways of making a magnet.

CHEMISTRY

11. (C) 'W' does not have an atmosphere, so it is not a suitable place for living things to survive as living things need air to breathe. X has no oxygen, so it is not a suitable place for living things to survive as they need to respire. As Y has oxygen for respiration and contains water, it is a suitable place for living things to survive. Oxygen makes up 21% of the air on the Earth. As Z has an atmosphere that is mainly made of carbon dioxide, it is not a suitable place for living things to survive.
12. (B) Following are the correct processes:
 Change of ice to water - melting
 Change of water to ice - freezing
 Change of water to steam - boiling
 Change of water vapour to water - condensation
13. (D) Saline water is hard due to dissolved salts in it. Therefore, it is not used for the given purposes.

14. (C) The rate of water evaporation (how fast liquid evaporates) depends on how wide the surface area is. The wider the surface area the quicker the evaporation process will take place, which is shown by the more amount of water lost in the beaker.
15. (A) In wheat flour, flour is the wanted component while husk (X) is the unwanted component. When cut paddy (Y) stalks are beaten on a stone, the grain seeds separate from their stalks.

BIOLOGY

16. (C) Neck joint is pivot joint and thumb joint is saddle joint.
17. (C) In the given classification 'X' is terrestrial ecosystem.

18. (D) Balsam is a dicot have taproot system.
19. (D) Animals that hunts and kills its prey (animals) are called predators.
20. (D) Bat is a mammal. Hen, Owl and Ostrich are birds.



CRITICAL THINKING

21. (C)
22. (C)
23. (C)
24. (C)
25. (D)