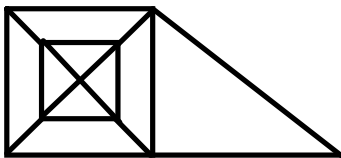


d. K8

5. Find the number of triangles in the given figure.



a. 18

b. 14

c. 24

d. 21

6. With which of the following, N is directly combined to form nitrides

a. Cu

b. Cr

c. Al

d. Mg

7. Which of the following oxides of Cr is amphoteric:

a. CrO_2

b. Cr_2O_3

c. CrO_5

d. CrO_3

8. In the silver plating of copper, $\text{K}[\text{Ag}(\text{CN})_2]$ is used instead of AgNO_3 . The reason is:

a. A thin layer of Ag is formed on Cu

b. More voltage is required

c. Ag^+ ions are completely removed from solution

d. Less availability of Ag^+ ions, as Cu cannot displace Ag from $[\text{Ag}(\text{CN})_2]^-$

9. What is the energy required in calories for the formation of energy rich bond between phosphorus and ADP molecules in DNA?

a. 250 cal

b. 7600 cal

c. 12,060 cal

d. 20,000 cal

10. F0 - F1 particles are associated with which of the following ?

a. Endoplasmic reticulum

b. Cytoplasm

c. Mitochondria

d. Protoplasm

11. Mycorrhizae benefit the host plant by :

a. absorbing minerals by increasing surface area in the soil

- b. secreting growth hormones such as IAA
- c. absorbing water by increasing surface area in the soil
- d. both a and c

12. The SI unit of the universal gas constant R is

- a. $\text{erg K}^{-1} \text{mol}^{-1}$
- b. $\text{watt K}^{-1} \text{mol}^{-1}$
- c. $\text{newton K}^{-1} \text{mol}^{-1}$
- d. $\text{joule K}^{-1} \text{mol}^{-1}$

13. A,B,C are vertices of an equilateral triangle imagined in free space (no gravity.) First a mass m is brought from infinity to point A and the work done in doing so is W_A . Then keeping m fixed at A, another identical mass m is brought from infinity to point B. The work done is W_B . The work done by another identical mass m brought from infinity to C is W_C keeping A and B fixed. Then

- a. $W_A = 0$
- b. $W_A < W_B$
- c. $W_C > W_B > W_A$
- d. $W_A > W_B > W_C$

14. A body is allowed to slide down a frictionless track freely under gravity. The track ends in a semicircular shaped part of diameter D . What should be the height (minimum) from which the body must fall so that it completes the circle.

- a.
- b.
- c). D
- d. $2D$

15. Water rises to a height of 13.6 cm in a capillary tube dipped in water. When the same tube is dipped in mercury, it is depressed by x cm. The angle of contact for water is zero and that for mercury 135° . The relative density of mercury is 13.6. The ratio of the surface tensions of mercury and water is

- a. 4
- b. 5
- c. 6
- d. 7