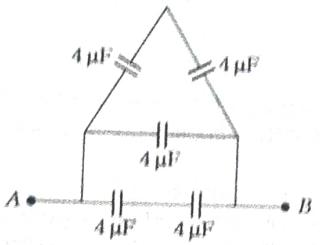
**14.** Equivalent capacitance between $A$ and $B$ is




(a) 8 μF (b) 6 μF
(c) 26 μF (d) $\frac{10}{3}$ μF

**15.** The energy stored in a capacitor of capacitance 100 μF is 50 J. Its potential difference is
(a) 50 V (b) 500 V
(c) 1000 V (d) 1500 V

**16.** The potential energy of a charged parallel plate capacitor is $U_0$. If a slab of dielectric constant $K$ is inserted between the plates, then the new potential energy will be
(a) $\frac{U_0}{K}$ (b) $U_0K^2$
(c) $\frac{U_0}{K^2}$ (d) $U_0^2$

**17.** A series combination of $n_1$ capacitors, each of value $C_1$, is charged by a source of potential difference $4V$. When another parallel combination of $n_2$ capacitors, each of value $C_2$, is charged by a source of potential difference $V$, it has the same (total) energy stored in it, as the first combination has. The value of $C_2$, in terms of $C_1$ is, then
(a) $\frac{16C_1}{n_1n_2}$ (b) $\frac{2C_1}{n_1n_2}$
(c) $16\frac{n_2}{n_1}C_1$ (d) $2\frac{n_2}{n_1}C_1$

**18.** If the charge on a capacitor is increased by 2 C, then the energy stored in it increases by 21%. The original charge on the capacitor is
(a) 10 C (b) 20 C
(c) 30 C (d) 40 C

**19.** A capacitor of capacitance value 1 μF is charged to 30 V and the battery is then disconnected. If it is connected across a 2 μF capacitor, then the energy lost by the system is
(a) 300 μJ (b) 450 μJ (c) 225 μJ (d) 150 μJ
(e) 100 μJ

**20.** A parallel plate capacitor is charged to a potential difference of 50 volts. It is then discharged through a resistance for 2 seconds and its potential drops by 10 volts. Calculate the fraction of energy stored in the capacitance
(a) 0.14 (b) 0.25
(c) 0.50 (d) 0.64