EXERCISE-I (Conceptual Questions) Build Up Your Understanding

CAPACITANCE, ENERGY STORED IN CAPACITOR & SPHERICAL CAPACITOR

1. The capacitance C of a capacitor is :
(1) independent of the charge and potential of the capacitor.
(2) dependent on the charge and independent of potential.
(3) independent of the geometrical configuration of the capacitor.
(4) independent of the dielectric medium between the two conducting surfaces of the capacitor.

2. To increase the charge on the plate of a capacitor implies to :-
(1) decrease the potential difference between the plates.
(2) decrease the capacitance of the capacitor.
(3) increase the capacitance of the capacitor.
(4) increase the potential difference between the plates.

3. The net charge on a capacitor is :-
(1) 2q (2) q/2 (3) 0 (4) infinity

4. The earth has Volume 'V' and Surface area 'A' ; then its capacitance would be :
(1) $1\pi\in_0 \frac{A}{V}$ (2) $4\pi\in_0 \frac{V}{A}$ (3) $12\pi\in_0 \frac{V}{A}$ (4) $12\pi\in_0 \frac{A}{V}$

5. Capacitors are used in electrical circuits where appliances need rapid :
(1) Current (2) Voltage (3) Watt (4) Resistance

6. Which of the following is called electrical energy tank?
(1) Resistor (2) Inductance (3) Capacitor (4) Motor

7. If the maximum circumference of a sphere is 2 m, then its capacitance in water would be :- (Dielectric constant of water = 81)
(1) 27.65 pF (2) 2385 pF (3) 236.5 pF (4) 2865 pF

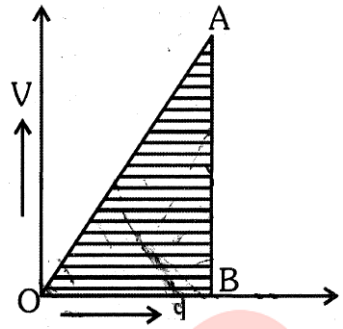
8. The two parallel plates of a condenser have been connected to a battery of 300 V and the charge collected at each plate is 1 μC. The energy supplied by the battery is :
(1) 6×10^{-4} J (2) 3×10^{-4} J (3) 1.5×10^{-4} J (4) 4.5×10^{-4} J

9. When a capacitor of value 200 μF charged to 200V is discharged separately through resistance of 2 ohms and 8 ohms, then heat produced in joule will respectively be:
(1) 4 and 16 (2) 16 and 4 (3) 4 and 8 (4) 4 and 4

10. The potential to which a conductor is raised, depends on :-

(1) the amount of charge
(2) the geometry and size of the conductor
(3) both (1) and (2)
(4) None of these

11. The charge q on a capacitor varies with voltage as shown in figure. The area of the triangle AOB represents :



(1) electric field between the plates
(2) electric flux between the plates
(3) energy density
(4) energy stored by the capacitor

12. An uncharged capacitor is connected to a battery. On charging the capacitor :-

(1) all the energy supplied is stored in the capacitor.
(2) half the energy supplied is stored in the capacitor.
(3) the energy stored depends upon the capacity of the capacitor only.
(4) the energy stored depends upon the time for which the capacitor is charged.

CYLINDRICAL CAPACITOR PARALLEL PALTE CAPACITOR & EFFECT OF DIELECTRIC SLAB

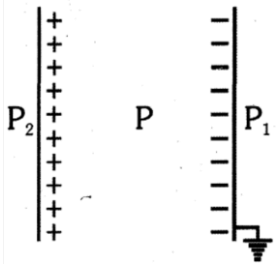
13. The capacity of parallel plate condenser depends on:

(1) the type of metal used
(2) the thickness of plates
(3) the potential difference applied across the plates
(4) the separation between the plates.

14. A parallel plate capacitor has rectangular plates of 400 cm^2 area and are separated by a distance of 2 mm with air as the medium. What charge will appear on the plates if a 200 volt potential difference is applied across the capacitor ?

(1) $3.54 \times l0^{-6}$ C
(2) 3.54×10^{-8} C
(3) $3.54 \times l0^{-10}$ C
(4) $1770.8 \times l0^{-13}$ C

15. There are two metallic plates of a parallel plate capacitor. One plate is given a charge +q while the other is earthed as shown. Points P, P_1 and P_2 are taken as shown in adjoining figure. Then the electric intensity is not zero at :



(1) P only (2) P_1 only (3) P_2 only (4) P, P_1 and P_2

16. The distance between the plates of a circular parallel plate capacitor of diameter 40 mm, whose capacity is equal to that of a metallic sphere of radius 1m will be :
(1) 0.01 mm (2) 0.1 mm (3) 1.0 mm (4) 10 mm

17. The energy density in a parallel plate capacitor is given as 2.1×10^{-9} J/m^3. The value of the electric field in the region between the plates is :
(1) 2.1 Nc^{-1} (2) 21.6 NC^{-1} (3) 72 Nc^{-1} (4) 8.4 Nc^{-1}

18. A charged parallel plate capacitor of distance (d) has U_0 energy. A slab of dielectric constant (K) and thickness (d) is then introduced between the plates of the capacitor. The new energy of the system is given by:
(1) KU_0 (2) K^2U_0 (4) $\frac{U_0}{K}$ (4) $\frac{U_0}{K^2}$

19. The energy and capacity of a charged parallel plate capacitor are U and C respectively. Now a dielectric slab of $\in_r = 6$ is inserted in it then energy and capacity becomes : (Assuming charge on plates remains constant)
(1) 6U, 6C (2) U, C (3) $\frac{U}{6}$, 6C (4) U, 6C

20. Distance between the plates of a parallel plate capacitor is 'd' and area of each plate is A. When a slab of dielectric constant K and thickness t is placed between the plates, its capacity becomes:
(1) $\frac{\varepsilon_0 A}{\left[d+t\left\{1-\frac{1}{K}\right\}\right]}$ (2) $\frac{\varepsilon_0 A}{\left[d+t\left\{1+\frac{1}{K}\right\}\right]}$
(3) $\frac{\varepsilon_0 A}{\left[d-t\left\{1+\frac{1}{K}\right\}\right]}$ (4) $\frac{\varepsilon_0 A}{\left[d-t\left\{1-\frac{1}{K}\right\}\right]}$

21. When a slab of dielectric medium is placed between the plates of a parallel plate capacitor which is connected with a battery, then the charge on plates in comparison with earlier charge:
(1) is less
(2) is same
(3) is more
(4) depends on the nature of the material inserted

22. A glass slab is put within the plates of a charged parallel plate condenser. Which of the following quantities does not change ?

(1) energy of the condenser (2) capacity
(3) intensity of electric field (4) charge

23. A parallel plate capacitor is connected to a battery and a dielectric slab is inserted between the plates, then which quantity increase :
(1) potential difference (2) electric field
(3) stored energy (4) E.M.F. of battery

24. A parallel plat? capacitor is charged by a battery After charging the capacitor, battery is disconnected and a dielectric plate is inserted between the plates. Then which of the following statements is not correct, there is a/an ?
(1) increase in the stored energy (2) decrease in the potential difference
(3) decrease in the electric field (4) increase in the capacitance

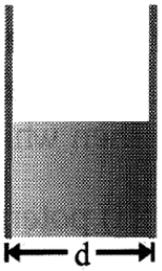
25. A parallel plate capacitor is charged by a battery. After charging the capacitor, battery is disconnected and distance between the plates is decreased then which of the following statement is correct ?
(1) electric field does not remain constant (2) potential difference is increased
(3) the capacitance decreases (4) the stored energy decreases

26. A parallel plate capacitor is connected with a battery whose potential difference remains constant. If the plates of the capacitor are shifted apart then the intensity of electric field :
(1) decreases and charge on plates also decreases.
(2) remains constant but charge on plates decreases.
(3) remains constant but charge on the plates increases.
(4) increases but charge on the plates decreases.

27. A parallel plate capacitor is charged with a battery and afterwards the battery is removed. If now, with the help of insulating handles, the distance between the plates is increased, then
(1) charge on capacitor increases and capacity decreases.
(2) potential difference between the plates increases.
(3) capacitor of capacitor increases.
(4) value of energy stored in capacitor decreases.

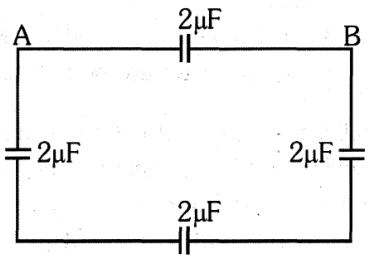
28. Can a metal be used as a medium for dielectric ?
(1) Yes (2) No
(3) Depends on its shape (4) Depends on dielectric

29. A parallel plate air capacitor has a capacitance C. When it is half filled with a dielectric of dielectric constant 5, the percentage increase in the capacitance will be :-
(1) 400% (2) 66.6%
(3) 33.3% (4) 200%



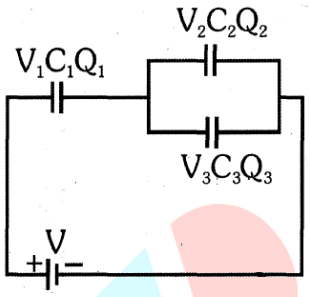
COMBINATION OF CAPACITORS & SHARING OF CHARGES

30. the equivalent capacitance between the points A and B in the given diagram is :



(1) 8 μF (2) 6 μF (3) $\frac{8}{3}$ μF (4) $\frac{3}{8}$ μF

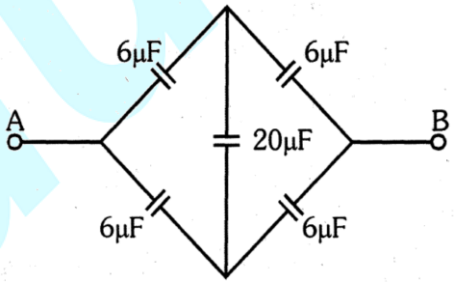
31. In an adjoining figure three capacitors C_1, C_2 and C_3 are joined to a battery. The correct condition will be :



(1) $Q_1 = Q_2 = Q_3$ and $V_1 = V_2 = V_3 = V$ (2) $Q_1 = Q_2 + Q_3$ and $V = V_1 + V_2 + V_3$
(3) $Q_1 = Q_2 + Q_3$ and $V = V_1 + V_2$ (4) $Q_2 = Q_3$ and $V_2 = V_3$

32. A number of capacitors, each of capacitance 1 μF and each one of which gets punctured if a potential difference just exceeding 500 volt is applied, are provided. Then an arrangement suitable for giving a capacitor of capacitance 3 μF across which 2000 volt may be applied requires at least :
(1) 4 component capacitors (2) 12 component capacitors
(3) 48 component capacitors (4) 16 component capacitors

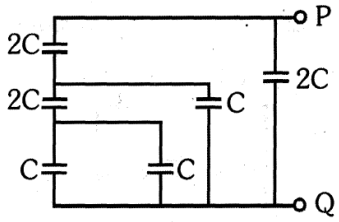
33. The effective capacity of the network between terminals A and B is :



(1) 6 μF (2) 20 μF (3) 3 μF (4) 10 μF

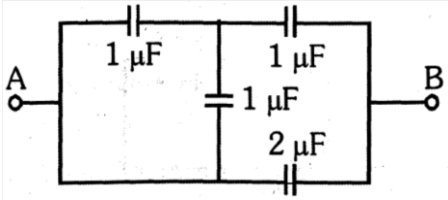
34. A series combination of two capacitances of value 0.1 μF and μF is connected with a source of voltage 500 volts. The potential difference in volts across the capacitor of value 0.1 μF will be:
(1) 50 (2) 500 (3) 45.5 (4) 454.5

35. The value of equivalent capacitance of the combination shown in figure, between the points P and Q is:



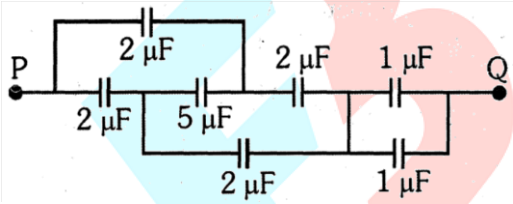
(1) 3C (2) 2C (3) C (4) C/3

36. The equivalent capacitance between points A and B of the circuit shown will be :



(1) $\frac{2}{3}$ μF (2) $\frac{5}{3}$ μF (3) $\frac{8}{3}$ μF (4) $\frac{7}{3}$ μF

37. The effective capacitance between the points P and Q of the arrangement shown in the figure is :



(1) (1/2) μF (2) 1 μF (3) 2 μF (4) 1.33 μF

38. Two spheres of radii R_1 and R_2 having equal charges are joined together with a copper wire. If V is the potential of each sphere after they are separated from each other, then the initial charge on both spheres was :

(1) $\frac{V}{k}(R_1 + R_2)$ (2) $\frac{V}{2k}(R_1 + R_2)$ (3) $\frac{V}{3k}(R_1 + R_2)$ (4) $\frac{V}{k}\frac{(R_1 R_2)}{(R_1 + R_2)}$

39. Two spheres of radii 1 cm and 2 cm have been charged with 1.5×10^{-8} and 0.3×10^{-7} coulombs of positive charge. When they are connected with a wire, charge :

(1) will flow from the first to the second
(2) will flow from the second to the first
(3) will not flow at all
(4) may flow either from first to second, or from the second to first, depending upon the length of the connecting wire

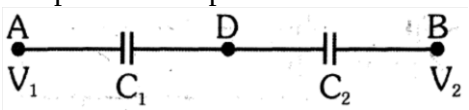
40. Half of the space between a parallel plate capacitor is filled with a medium of dielectric constant K parallel to the plates. If initially the capacity was C, then the new capacity will be:

(1) 2KC/(1+K) (2) C (K+1)/2 (3) CK/(1+K) (4) KC

41. Two identical parallel plate capacitors are connected in series and then joined with a battery of 100 V. A sheet of dielectric constant 4.0 is inserted between the plates of second capacitor. The potential difference across the capacitors will be respectively :

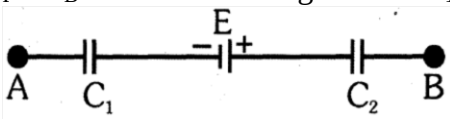
(1) 50 V, 50 V (2) 80 V, 20 V (3) 20 V, 80 V (4) 75 V, 25 V

42. Two capacitances C_1 and C_2 in a circuit are joined as shown in figure. The potential of point A is V_1 and that of B is V_2. The potential of point D will be :



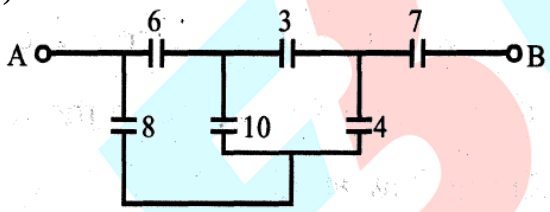
(1) $\frac{1}{2}(V_1 + V_2)$ (2) $\frac{C_2V_1 + C_1V_2}{C_1 + C_2}$ (3) $\frac{C_1V_1 + C_2V_2}{C_1 + C_2}$ (4) $\frac{C_2V_1 - C_1V_2}{C_1 + C_2}$

43. A circuit has a section AB as shown in the figure with E = 10 V, C_1 = 1.0 μF, C_2 = 2.0 μF and the potential difference $V_A - V_B$ = 5 V. The voltage across C_1 is :



(1) zero (2) 5 V (3) 10 V (4) 15 V

44. In the circuit diagram shown all the capacitors are in μF. The equivalent capacitance between points A & B is (in μF) :



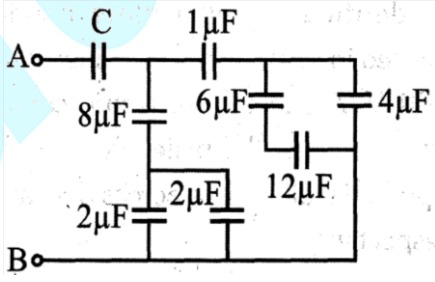
(1) 14/5 (2) 7.5 (3) 3/7 (4) None of these

45. Two capacitances C_1 and C_2 are connected in series; assume that $C_1 < C_2$. The equivalent capacitance of this arrangement is C, where :

(1) $C < C_1/2$ (2) $C_1/2 < C < C_1$

(3) $C_1 < C < C_2$ (4) $C_2 < C < 2C_2$

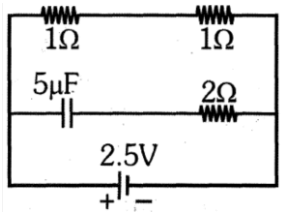
46. In the following circuit the resultant capacitance between A & B is 1 μF. Find the value of C :



(1) $\frac{23}{32}$ μF (2) $\frac{32}{23}$ μF (3) $\frac{13}{23}$ μF (4) $\frac{23}{13}$ μF

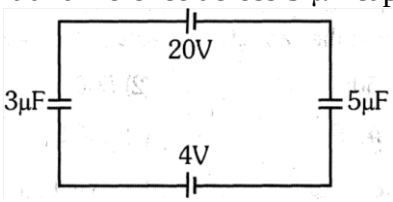
CHARGING AND DISCHARGING OF CAPACITORS & CAPACITOR'S CIRCUIT

47. A capacitor of capacitance 5 μF is connected as shown in the figure. The internal resistance of the cell is 0.5Ω. The amount of charge on charge on the capacitor plate is :



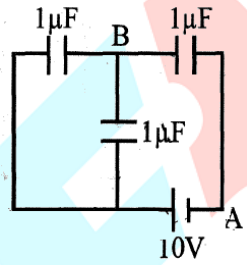
(1) 0 (2) 5 μC (3) 10 μC (4) 25 μC

48. In the given circuit, the potential difference across 3 μF capacitor will be :



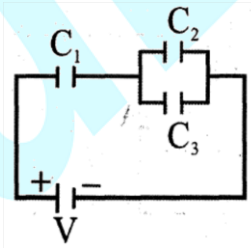
(1) 16 V (2) 10 V (3) 6 V (4) 4 V

49. If potential of A is 10 V, then potential of B is :



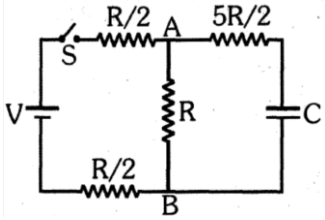
(1) 25/3 V (2) 50/3 V (3) 100/3 V (4) 50 V

50. Capacitance $C_1 = 2C_2 = 2C_3$ and potential difference across C_1, C_2 and C_3 are V_1, V_2 and V_3 respectively then :



(1) $V_1 = V_2 = V_3$ (2) $V_1 = 2V_2 = 2V_3$
(3) $2V_1 = V_2 = V_3$ (4) $2V_1 = 2V_2 = V_3$

51. In the circuit shown in figure, the battery is an ideal one with emf V. The capacitor is initially uncharged switch S is closed at time t = 0.



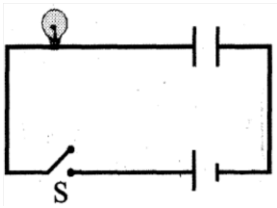
The final charge Q on the capacitor is :

(1) $\frac{CV}{2}$ (2) $\frac{CV}{3}$ (3) CV (4) $\frac{CV}{6}$

52. In previous question, what is the current in the steady state is ?

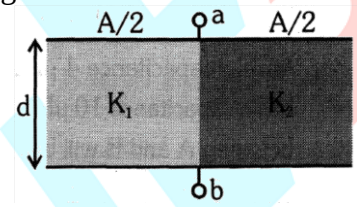
(1) $\frac{V}{2R}$ (2) $\frac{V}{R}$ (3) $\frac{2V}{R}$ (4) $\frac{V}{3R}$

53. A bulb, a capacitor and a battery are connected together as shown here, with switch S initially open. When the switch S is closed, which one of the following is true ?



(1) The bulb will light up for an instant when the capacitor starts charging.
(2) The bulb will light up when the capacitor is fully charged
(3) The bulb will not light up at all
(4) The bulb will light up and go off at regular intervals.

54. The capacity of a parallel plate air capacitor is 10 μF. As shown in the figure this capacitor is divided into two equal parts; these parts are filled by media of dielectric constants $K_1 = 2$ and $K_2 = 4$. Capacity of this arrangement will be :



(1) 20 μF (2) 30 μF (3) 10 μF (4) 40 μF

55. Three capacitors, each of value 1 μF are so combined that the resultant capacity is 1.5 μF. Then:

(1) All three capacitors are connected in parallel.
(2) All three capacitors are connected in series.
(3) Third capacitor is in series with a parallel combination of the other two.
(4) Third capacitor is in parallel with a series combination of the other two.

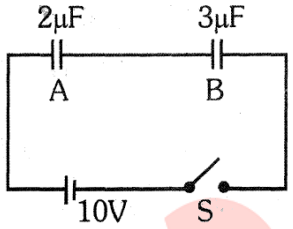
56. Two conducting spheres of radii R_1 and R_2 are charged with charges Q_1 and Q_2 respectively. On bringing them in contact there is :

(1) no change in the energy of the system
(2) an increase in the energy of the system if $Q_1R_2 \neq Q_2R_1$
(3) always a decrease in the energy of the system
(4) a decrease in the energy of the system if $Q_1R_2 \neq Q_2R_1$

57. A capacitor is charged with a battery and energy stored is U. After disconnecting the battery another capacitor of same capacity is connected in parallel with it. The energy stored in each capacitor is:
(1) U/2 (2) U/4 (3) 4 U (4) 2 U

58. Three capacitors of capacitances 3 μF, 10 μF and 15 μF are connected in series to a voltage source of 100 V. The charge on 15 μF is :
(1) 50 μC (2) 160 μC (3) 200 μC (4) 280 μC

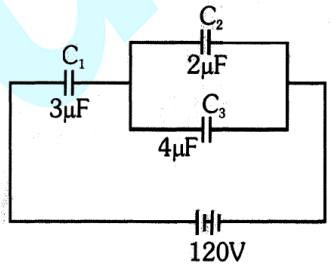
59. Two capacitors A and B are connected in series with a battery as shown in the figure. When the switch S is closed and the two capacitors get charged fully, then :



(1) the potential difference across the plates of A is 4 V and across the plates of B is 6 V
(2) the p.d. across the plates of A is 6 V and across the plates of B is 4 V
(3) the ratio of electrical energies stored in A and B is 2 : 3
(4) the ratio of charges on A and B is 3 : 2

60. An automobile spring extends 0.2 m for 5000 N load. The ratio of potential energy stored in this spring when it has been compressed by 0.2 m to the potential energy stored in a 10 μF capacitor at a potential difference of 10000 V will be :
(1) $\frac{1}{4}$ (2) 2 (3) $\frac{1}{2}$ (4) 2

61. The charge on each capacitors shown in figure and the potential difference across them will be respectively :-



(1) 240 μC, 80 μC, 160 μC and 80 V, 40 V, 40 V
(2) 300 μC, 75 μC, 150 μC and 40 V, 80 V, 60 V
(3) 220 μC, 70 μC, 140 μC and 60V, 50 V, 40 V
(4) none of these

62. Three capacitance 2 μF, 3 μF and 6 μF are connected in series with a 10 volt battery, then charge on 3 μF capacitor is :
(1) 5 μC (2) 10 μC (3) 11 μC (4) 15 μC

63. Two charged spheres having radii a and bare joined with a wire then the ratio of electric field E_a/E_b on their respective surfaces is :

(1) a / b (2) b / a (3) a^2 / b^2 (4) b^2 / a^2

64. A solid conducting sphere of radius R_1 is surrounded by another concentric hollow conducting sphere of radius R_2. The capacitance of this assembly is proportional to :

(1) $\frac{R_2 - R_1}{R_1 R_2}$ (2) $\frac{R_2 + R_1}{R_1 R_2}$ (3) $\frac{R_1 R_2}{R_1 + R_2}$ (4) $\frac{R_1 R_2}{R_2 - R_1}$

65. Two spherical conductors A and B of radius a and b (b > a) are placed in air concentrically. B is given a charge + Q coulombs and A is grounded. The equivalent capacitance of these is :

(1) $4\pi\in_0 \frac{ab}{(b-a)}$ (2) $4\pi\in_0 (a + b)$ (3) $4\pi\in_0 b$ (4) $4\pi\in_0 \frac{b^2}{(b-a)}$

66. Time constant of a series R-C circuit is :-

(1) +RC (2) –RC (3) $\frac{R}{C}$ (4) $\frac{C}{R}$

67. Energy per unit volume for a capacitor having area A and separation d kept at potential difference V is given by :

(1) $\frac{1}{2}\in_0 \frac{V^2}{d^2}$ (2) $\frac{1}{2\in_0}\frac{V^2}{d^2}$ (3) $\frac{\varepsilon_0 V^2 A^2}{2d^2}$ (4) $\frac{1}{2}\frac{V^2 A^2}{\varepsilon_0 d^2}$

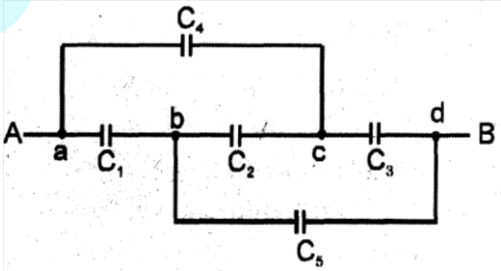
68. A capacitor of capacity C_1 charged upto a voltage V and then connected to an uncharged capacitor of capacity C_2. Then final potential difference across each will be :

(1) $\frac{C_2 V}{C_1 + C_2}$ (2) $\frac{C_1 V}{C_1 + C_2}$ (3) $\left(1+\frac{C_2}{C_1}\right)V$ (4) $\left(1-\frac{C_2}{C_1}\right).V$

69. A conducting sphere of radius 10 cm is charged with 10 μC. Another uncharged sphere of radius 20 cm is allowed to touch it for some time. After that, if the spheres are separated, then surface density of charge on the spheres will be in the ratio of :

(1) 1 : 4 (2) 1 : 3 (3) 2 : 1 (4) 1 : 1

70. In the given figure, the capacitors C_1, C_3, C_4, C_5



have a capacitance 4 μF each. If the capacitor C_2 has capacitance 10 μF, then effective capacitance between A and B will be :

(1) 2 μF (2) 4 μF (3) 6 μF (4) 8 μF

71. Two capacitors of capacitances 3 μF and 6 μF are charged to a potential of 12 V each. They are now connected to each other with the positive plate of one joined to the negative plate of the other. The potential difference across each will be
(1) 3 V (2) Zero (3) 6 V (4) 4 V

72. A capacitor of 0.2 mF capacitance is charged to 600 V. After removing the battery, it is connected with a 1.0 μF capacitor in parallel, then the potential difference across each capacitor will become:
(1) 300 V (2) 600 V (3) 100 V (4) 120 V

73. Mean electric energy density between the plates of a charged capacitor is :
Here q = Charge on capacitor
A = Area of each plate of the capacitor
(1) $q^2/(2\in_0 A^2)$ (2) $q/(2\in_0 A^2)$ (3) $q^2/(2\in_0 A)$ (4) None of these

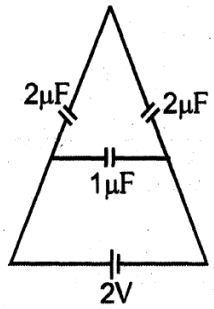
74. If potential difference across a capacitor is changed from 15 V to 30 V work done is W. The work done when potential difference is changed from 30 V to 60 V, will be :
(1) W (2) 4 W (3) 3 W (4) 2 W

75. Three capacitors each of capacity 4 μF are to be connected in such a way that the effective capacitance is 6 μF. This can be done by :-
(1) connecting all of them in. series
(2) connecting all of them in parallel
(3) connecting two in series and one in parallel
(4) connecting two in parallel and one in series

76. A capacitor is connected to a 10 V battery. The charge on plates is 40 μC when medium between plates is air. The charge on the plates become 100 μC when the space between the plates is filled with oil. The dielectric constant of oil is :
(1) 2.5 (2) 4 (3) 6.25 (4) 10

77. Two capacitor each having a capacitance C and breakdown voltage V are joined in series. The effective capacitance and maximum working voltage of the combination is :-
(1) 2C, 2V (2) $\frac{C}{2}, \frac{V}{2}$ (3) 2C, V (4) $\frac{C}{2}$, 2V

78. The charge (in μC) on any one of the 2 μF capacitor and 1 μF capacitor will be given respectively as :



(1) 1, 2 (2) 2, 1 (3) 1, 1 (4) 2, 2

79. The electric field between the plates of a parallel plate capacitor when connected to a certain battery is E_0. If the space between the plates of the capacitor is filled by introducing a material of dielectric constant K without disturbing the battery connections; the field between the plates will be :

(1) KE_0 (2) E_0 (3) $\frac{E_0}{K}$ (4) None of the above

80. A 40 μF capacitor in a defibrillator is charged to 3000 V. The energy stored in the capacitor is sent through the patient during a pulse of duration 2 ms. The power delivered to the patient is :

(1) 45 kW (2) 90 kW (3) 180 kW (4) 360 kW

81. Two capacitors with capacity C_1 and C_2, when connected in series, have a capacitance C_s and when connected in parallel have a capacitance C_p. Which of the following is true ?

(1) $C_s = C_1 + C_2$ (2) $C_p = \frac{C_1C_2}{C_1+C_2}$ (3) $\frac{C_s}{C_p} = \frac{C_1}{C_2}$ (4) $C_sC_p = C_1C_2$

82. A parallel plate capacitor C has a charge q and potential V between the plates. Work required to double the distance between the plates is :

(1) $\frac{1}{2}CV^2$ (2) $\frac{1}{4}CV^2$ (3) $\frac{1}{2}C\left(\frac{V}{2}\right)^2$ (4) CV^2

83. Two metallic spheres of radii R_1 and R_2 are connected by a thin wire. If $+ q_1$ and $+ q_2$ are the charges on the two spheres then :

(1) $\frac{q_1}{q_2} = \frac{R_1^2}{R_2^2}$ (2) $\frac{q_1}{q_2} = \frac{R_1}{R_2}$ (3) $\frac{q_1}{q_2} = \frac{R_1^3}{R_2^3}$ (4) $\frac{q_1}{q_2} = \frac{(R_1^2 - R_2^2)}{(R_1^2 + R_2^2)}$

84. Two spheres have radii 10 cm & 20 cm. One of the sphere is given 150 μC charge and connected by a wire. Their common potential will be -

(1) 9×10^6 volts (2) 4.5×10^6 volts (3) 1.8×10^6 volts (4) 1.35×10^9 volts

85. Total energy stored in a 900 μF capacitor at 100 volts is transferred into a 100 μF capacitor. The potential drop across the new capacitor is (in volts)

(1) 900 (2) 200 (3) 100 (4) 300

ANSWER KEY

EXERCISE-I (Conceptual Question)

1.	(1)	**2.**	(4)	**3.**	(3)	**4.**	(3)	**5.**	(1)	**6.**	(3)	**7.**	(4)
8.	(2)	**9.**	(4)	**10.**	(3)	**11.**	(4)	**12.**	(2)	**13.**	(4)	**14.**	(2)
15.	(1)	**16.**	(2)	**17.**	(2)	**18.**	(3)	**19.**	(3)	**20.**	(4)	**21.**	(3)
22.	(4)	**23.**	(3)	**24.**	(1)	**25.**	(4)	**26.**	(1)	**27.**	(2)	**28.**	(2)
29.	(4)	**30.**	(3)	**31.**	(3)	**32.**	(3)	**33.**	(1)	**34.**	(4)	**35.**	(1)
36.	(3)	**37.**	(2)	**38.**	(2)	**39.**	(3)	**40.**	(1)	**41.**	(2)	**42.**	(3)
43.	(3)	**44.**	(1)	**45.**	(2)	**46.**	(2)	**47.**	(3)	**48.**	(2)	**49.**	(2)
50.	(1)	**51.**	(1)	**52.**	(1)	**53.**	(1)	**54.**	(2)	**55.**	(4)	**56.**	(4)
57.	(2)	**58.**	(3)	**59.**	(2)	**60.**	(2)	**61.**	(1)	**62.**	(2)	**63.**	(2)
64.	(4)	**65.**	(4)	**66.**	(1)	**67.**	(1)	**68.**	(2)	**69.**	(3)	**70.**	(2)

71.	(4)	**72.**	(3)	**73.**	(1)	**74.**	(2)	**75.**	(3)	**76.**	(1)	**77.**	(4)
78.	(4)	**79.**	(2)	**80.**	(2)	**81.**	(4)	**82.**	(1)	**83.**	(2)	**84.**	(2)
85.	(4)												