45. Water is filled in a container upto a height h, and a hole is made at the bottom. The speed of water flowing out changes with h as

(A) h^2.

(B) h.

(C) $h^{1/3}$.

(D) $h^{1/2}$.

46. A 100 watt monochromatic source emits photons of wavelength $6000\mathring{A}$. The number of photons it emits per second is

(A) $\sim 3 \times 10^{15}$.

(B) $\sim 3 \times 10^{18}$.

(C) $\sim 3 \times 10^{20}$.

(D) $\sim 6 \times 10^{20}$.

47. Thermodynamics tells us that for a closed isolated system with energy E and entropy S undergoing internal changes

(A) E and S both remain constant.

(B) E remains constant but S can increase.

(C) E remains constant but S must decrease.

(D) E and S can both increase.

48. Liquid rises in a tube due to capillary action provided the angle of contact between the liquid and the material of the capillary wall is

(A) $90°$.

(B) acute.

(C) obtuse.

(D) zero.

49. The number of distinct and different arrangements of three balls coloured red, white and blue arranged in a line is

(A) $3 \times 3 \times 3 = 27$.

(B) $3 \times 3 = 9$.

(C) $3 \times 2 = 6$.

(D) 1.