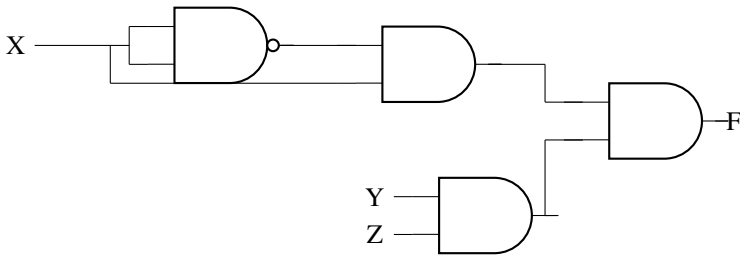
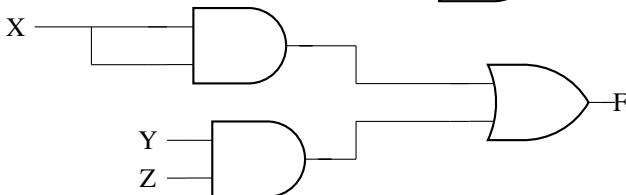


53) Which of the following circuits is a realization of the above function F

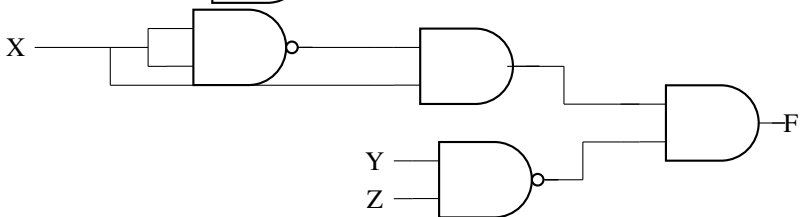
a)



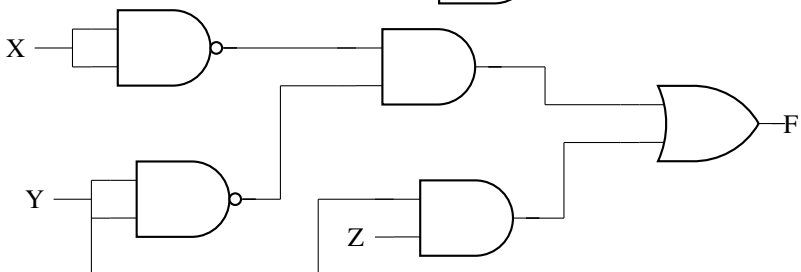
b)



c)

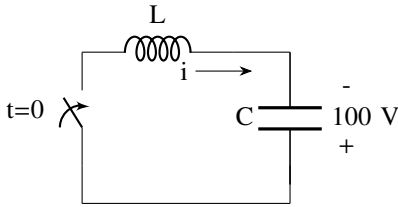


d)



Statement for the linked Answer Questions 54 and 55

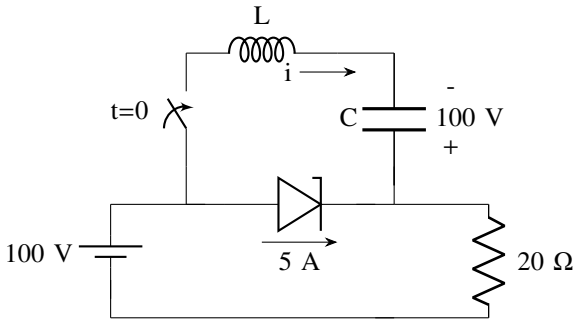
The $L-C$ circuit shown in the figure has an inductance $L = 1\text{ mH}$ and a capacitance $C = 10\text{ }\mu\text{F}$



54) The initial current through the inductor is zero, while the initial capacitor voltage is 100 V. The switch is closed at $t = 0$. The current i through the circuit is :

- a) $5 \cos(5 \times 10^4 t) \text{ A}$
- b) $5 \sin(10^4 t) \text{ A}$
- c) $10 \cos(5 \times 10^4 t) \text{ A}$
- d) $10 \sin(10^4 t) \text{ A}$

55) The L - C circuit of Q54 is used to communicate a thyristor, which is initially carrying a current of 5 A as shown in the figure below. The values and initial conditions of L and C are same as in Q54. The switch is closed at $t = 0$. If the forward drop is negligible, the time taken for the device to turn off is



- a) $52 \mu\text{s}$
- b) $156 \mu\text{s}$
- c) $312 \mu\text{s}$
- d) $26 \mu\text{s}$

56) 25 persons in a room. 15 of them play hockey, 17 of them play football and 10 of them play both hockey and football. Then the number of persons playing neither football nor hockey is :

- a) 2
- b) 17
- c) 13
- d) 3

57) Choose the most appropriate word from the options given below to complete the following sentence:

If we manage to our natural resources, we would leave a better planet for our children.

- a) uphold

- b) restrain
- c) cherish
- d) conserve

58) *The below consists of a pair of related words followed by four pairs of words. Select the pair that best expresses the relation in the original pair.*

Unemployed : Worker

- a) fallow : land
- b) unaware : sleeper
- c) wit : jester
- d) renovated : house

59) *Which of the following options is the closest in meaning to the word below :*

Circuitous

- a) cyclic
- b) indirect
- c) confusing
- d) crooked

60) *Choose the most appropriate word from the options given below to complete the following sentence*

His rather casual remarks on politics his lack of seriousness about the subject.

- a) masked
- b) belied
- c) betrayed
- d) suppressed

61) Hari (*H*), Gita (*G*), Irfan (*I*) and Saira (*S*) are siblings (*i.e. brothers and sisters*). All were born on 1st January. The age difference between any two successive siblings (*that is born one after another*) is less than 3 years. Given the following facts :

- i. $\text{Hari's age} + \text{Gita's age} > \text{Irfan's age} + \text{Saira's age}$.
- ii. The age difference between Gita and Saira is 1 year. However, Gita is not the oldest and Saira is not the youngest.
- iii. There are no twins.

In what order were they born (*oldest first*)?

- a) *HSIG*
- b) *SGHI*
- c) *IGSH*
- d) *IHSG*

62) 5 skilled workers can build a wall in 20 days; 8 semi-skilled workers can build a wall in 25 days; 10 unskilled workers can build a wall in 30 days. If a team has 2 skilled, 6 semi-skilled and 5 unskilled workers, how long will it take to build the wall?

- a) 20 days
- b) 18 days
- c) 16 days
- d) 15 days

- 63) Modern warfare has changed from large scale clashes of armies to suppression of civilian populations. Chemical agents that do their work silently appear to be suited to such warfare; and regretfully, there exist people in military establishments who think that chemical agents are useful tools for their cause.

Which of the following statements best sums up the meaning of above passage :

- a) Modern warfare has resulted in civil strife
 - b) Chemical agents are useful in modern warfare
 - c) Use of chemical agents in warfare would be undesirable.
 - d) People in military establishments like to use chemical agents in war.
- 64) Given digits 2, 2, 3, 3, 3, 4, 4, 4, 4 how many distinct 4 digit numbers greater than 3000 can be formed?
- a) 50
 - b) 51
 - c) 52
 - d) 53
- 65) If $137 + 276 = 435$ how many is $731 + 672$?
- a) 534
 - b) 1403
 - c) 1623
 - d) 1513