

## CHAPTER-9

## Theory of Machines-TOM

## 1. Mechanisms &amp; Machines

1. A kinematic pair consist of
- Pair of elements having line or point contact
  - Pair of elements having surface contact
  - Two elements that permit relative motion
  - Two elements which are mechanically held together

[SSC-JE : 2007]

2. A simple mechanism has:
- 1 link
  - 2 link
  - 3 link
  - 4 link

[SSC-JE : 2010]

3. A universal joint an example of:
- Lower pair
  - Higher pair
  - Rolling pair
  - Sliding pair

[SSC-JE : 2010]

4. The number of links  $L$  and the number of pairs in a kinematic chain conform to the relation

- $L = p - 4$
- $L = 2p - 4$
- $L = 2p + 4$
- $L = 2(p - 1)$

[SSC-JE : 2011]

5. A ball and socket joint forms a:
- Rolling pair
  - Sliding pair
  - Spherical pair
  - Turning pair

[SSC-JE : 2012]

6. In a kinematic chain. The minimum number of kinematic pairs required is

- One
- Two
- Three
- Four

[SSC-JE : 2013]

7. The relation between the number of links ( $L$ ) and number of pair( $P$ ) is:

- $L = 2P - 3$
- $L = 2P - 2$
- $L = 2P - 4$
- $L = 3 - 2P$

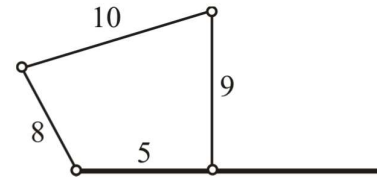
[SSC-JE : 2014]

8. The crank shaft turning in a journal bearing forms a :

- Turning pair
- Sliding pair
- Rolling pair
- Helical pair

[SSC-JE : 2014]

9. Figure shown a four bar chain and the number indicates the respective link lengths in cm. the type of the mechanism is known as :



- Slider crank
- Double crank
- Crank rocker
- Double rocker

[SSC-JE : 2014]

10. The contact between cam and follower is to from a :

- Lower pair
- Higher pair
- Sliding pair
- Rolling pair

[SSC-JE: 2014]

11. Quick return mechanism is an inversion of \_

- Four bar chain
- Single slider crank chain
- Double slider crank chain
- Crossed slider crank chain

[SSC-JE : 2017]

12. The following is the inversion of slider crank mechanism

- Whitworth quick return mechanism
- Hand-pump
- Oscillating cylinder engine

- Only A
- Only B
- Only C
- A , B and C

[SSC-JE : 2017]

13. Which amongst the following is an inversion of double slider crank chain?

- Engine indicator
- Elliptical indicator
- Quick trammel
- Coupled wheels of a locomotive

[SSC-JE : 2007]

14. Consider a point in a link connecting double slider crank chain. It would trace

- A circular path
- An elliptical path
- A straight path
- A parabolic path

[SSC-JE : 2007]

15. In double slider crank chain, the number of revolute pairs is / are

- 1
- 2
- 3
- 4

[SSC-JE : 2008]