Chapter 1: Introduction		
1. A device which receives energy and transforms		
a. Structure	b. Frame	
c. Machine	d. Element	
2. The part of a machine which moves relative to		
a. Kinematic link	b. Machine frame	
c. Body	d. Base	
3. A kinematic link of a machine should have the		
a. It should be fixed.	b. It should have relative motion.	
c. It should be completely deformable.	d. None of the above.	
4. When the members have no relative motion be		
a. Structure	b. Mechanism	
c. Machine	d. Element	
5. The member of a structure transmits	d. Liement	
a. Available energy into useful work	b. Power and motion both	
c. Motion only	d. Load only	
6. Two links of a machine forms a kinematic pair	,	
a. They are fixed	b. They have relative motion	
c. They are separated	d. All the above.	
7. When the motion between a pair is limited to a		
	I	
a. Completely constrained motion	b. Incompletely constrained motion d. No motion.	
c. Successfully constrained motion		
to be an	n more than one direction then the motion is said	
	h Incompletely constrained metion	
a. Completely constrained motion c. Successfully constrained motion	b. Incompletely constrained motion d. No motion.	
When the unconstrained motion between a part of the part of t		
then the motion is said to be a	in is forcefully made to form constrained motion	
a. Completely constrained motion	b. Incompletely constrained motion	
c. Successfully constrained motion	d. No motion.	
10. A square bar in a square hole is an example o	b. Incompletely constrained motion	
a. Completely constrained motion c. Successfully constrained motion	d. No motion.	
11. A shaft in a circular hole is an example of	d. No filotion.	
·	h Incompletely constrained metion	
a. Completely constrained motion	b. Incompletely constrained motion	
c. Successfully constrained motion	d. No motion.	
12. A shaft in a circular hole with collars on both sides has		
a. rotational motion	b. translational motion	
c. both rotational and translational motion	d. No motion.	
13. When there is only sliding motion between two elements, it is said to be		
a. Sliding pair	b. Turning pair	
c. Rolling pair	d. Screw pair	
14. When there is only turning motion between two elements, it is said to be		
a. Sliding pair	b. Turning pair	
c. Rolling pair	d. Screw pair	
15. When there is only rolling motion between to		
a. Sliding pair	b. Turning pair	
c. Rolling pair	d. Screw pair	
16. When there is motion between the screw threads of two elements, it is said to be		

a Clidina nain	h Tumina nain	
a. Sliding pair	b. Turning pair	
c. Rolling pair	d. Screw pair	
is the example of sliding pa		
a. Bolt and nut	b. Ball and roller bearing	
c. shaft in journal bearing	d. Piston and cylinder	
18 is the example of rolling pa		
a. Bolt and nut	b. Ball and roller bearing	
c. shaft in journal bearing	d. Piston and cylinder	
19 is the example of screw pa		
a. Bolt and nut	b. Ball and roller bearing	
c. shaft in journal bearing	d. Piston and cylinder	
20 is the example of turning p	pair.	
a. Bolt and nut	b. Ball and roller bearing	
c. shaft in journal bearing	d. Piston and cylinder	
21. When two elements are connected in such a	way that one spherical shaped element swivels	
about the other fixed element, the pair formed is	called	
a. Sliding pair	b. Turning pair	
c. Spherical pair	d. Screw pair	
22 is the example of spherical pair		
a. Bolt and nut	b. Piston and cylinder	
c. Ball and roller bearing	d. Attachment of car mirror	
23. When two elements have surface contact, the	ev are said to form a	
a. Higher pair	b. Lower pair	
c. Medium pair	d. None of the above	
24. When two elements have a line or point cont	act. they are said to form a	
a. Higher pair	b. Lower pair	
c. Medium pair	d. None of the above	
25. Piston and cylinder, bolt and nut and shaft in	a journal are the examples of	
a. Higher pair	b. Lower pair	
c. Medium pair	d. None of the above	
26. Toothed gear, belt and rope drive and cam ar		
a. Higher pair	b. Lower pair	
c. Medium pair	d. None of the above	
27. What is the type of contact between Piston a		
a. Point contact	b. Line contact	
c. Surface contact	d. Partial contact	
28. What is the type of contact between cam and follower.		
a. Point contact	b. Line contact	
c. Surface contact	d. Partial contact	
29. What is the type of contact between toothed		
a. Point contact	b. Line contact	
c. Surface contact d. Partial contact		
30. What is the type of contact between bolt and nut.		
a. Point contact	b. Line contact	
c. Surface contact	d. Partial contact	
31. If in the equation (I = 2p - 4), L.H.S is greater t	T	
a. Constrained Kinematic Chain	b. Unconstrained kinematic chain	
c. dynamic chain	d. Locked chain	
32. If in the equation (I = 2p - 4), L.H.S is less than R.H.S then the chain formed is called		

a. Constrained Kinematic Chain	b. Unconstrained kinematic chain	
c. dynamic chain	d. Locked chain	
33. If in the equation (I = 2p - 4), L.H.S is equal to		
a. Constrained Kinematic Chain	b. Unconstrained kinematic chain	
c. dynamic chain	d. Locked chain	
34. When the kinematic chain has only one degr		
a. Constrained Kinematic Chain	b. Unconstrained kinematic chain	
c. dynamic chain	d. Locked chain	
35. When the chain forms a rigid frame or struct		
a. Constrained Kinematic Chain	b. Unconstrained kinematic chain	
c. dynamic chain	d. Locked chain	
36. When two links are joined at the same conne		
a. Binary joint	b. Ternary joint	
c. Quaternary joint	d. welded joint	
37. When three links are joined at the same con		
a. Binary joint	b. Ternary joint	
c. Quaternary joint	d. welded joint	
38. When four links are joined at the same conn	T	
a. Binary joint	b. Ternary joint	
c. Quaternary joint	d. welded joint	
	nary joint	
a. One	b. Two	
c. Three	d. Four	
40. One Quaternary joint is equal to	Binary joint	
a. One	b. Two	
c. Three	d. Four	
41. When there is no degree of freedom i.e. n =		
a. Mechanism with two input motions	b. Mechanism with one single input motion	
c. Structure with no relative motion	d. Statically indeterminate structure.	
42. When there is one degree of freedom i.e. n =		
a. Mechanism with two input motions	b. Mechanism with one single input motion	
c. Structure with no relative motion	d. Statically indeterminate structure.	
43. When there is two degree of freedom i.e. n =		
a. Mechanism with two input motions	b. Mechanism with one single input motion	
c. Structure with no relative motion	d. Statically indeterminate structure.	
44. When there is negative degree of freedom i.	e. n = -1, the mechanism forms	
a. Mechanism with two input motions	b. Mechanism with one single input motion	
c. Structure with no relative motion	d. Statically indeterminate structure.	
45. The method of obtaining different mechanism	ms by fixing different links in a kinematic chain is	
known as		
a. Reverse mechanism	b. Inversion of mechanism	
c. convergent mechanism	d. Divergent mechanism	
46. A four bar chain mechanism consist of		
a. Four turning pair	b. Three turning and one sliding pair	
c. Two turning and two sliding pair	d. One turning and three sliding pair	
47. A single slider crank chain consist of		
a. Four turning pair	b. Three turning and one sliding pair	
c. Two turning and two sliding pair	d. One turning and three sliding pair	
48. A double slider crank chain consist of		

a. Four turning pair	b. Three turning and one sliding pair	
c. Two turning and two sliding pair	d. One turning and three sliding pair	
49. Which of the following is inversion(s) of single slider crank chain		
a. Whitworth quick return mechanism	b. Oscillating cylinder engine	
c. Rotary IC engine	d. All the above	
50. Which of the following is inversion(s) of double slider crank chain		
a. Elliptical trammels	b. Scotch yoke mechanism	
c. Oldham's coupling	d. All the above	

Chapter 3: Cam, cam profile and Friction		
1. Cam and follower have a contact between them.		
a. Point contact	b. Line contact	
c. Surface contact	d. No contact	
2. Which of the following is the type of follower		
a. Knife edge follower	b. Roller follower	
c. Flat faced follower	d. All the above	
3. When the motion of follower is along an axis p	assing through the center of the cam, it is known	
as		
a. Radial follower	b. Off-set follower	
c. Tangent follower	d. Inclined follower	
4. When the motion of follower is along an axis which is away from the cam centre, it is known as		
a. Radial follower	b. Off-set follower	
c. Tangent follower	d. Inclined follower	
5. When the follower reciprocates or oscillates in	the direction perpendicular to the cam axis, the	
cam is called		
a. Wedge cam	b. Spherical cam	
c. Radial cam	d. cylindrical cam	
6. When the follower reciprocates or oscillates in	the direction parallel to the cam axis in the	
groove at cam's surface, the cam is called		
a. Wedge cam	b. Spherical cam	
c. Radial cam	d. cylindrical cam	
7. The smallest circle drawn to the cam profile is		
a. Base circle	b. Pitch circle	
c. Prime circle	d. Profile circle	
8. The reference point on the follower used to generate the pitch curve is known as		
a. Reference point	b. Trace point	
c. Pitch point	d. center point	
9. For which of the follower the pitch curve and cam profile are separated by the radius of roller.		
a. Knife edge follower	b. Flat faced follower	
c. Roller follower	d. Spherical follower	
10. Which of the following is the type of follower motion		
a. Uniform velocity	b. SHM	
c. Uniform acceleration and retardation	d. All the above	
11. In radial follower the motion is		
a. along the axis away from centre of cam	b. along the axis passing from cam centre	
c. perpendicular to axis of cam	d. inclined to axis of cam	

b. along the axis passing from cam centre d. inclined to axis of cam s b. parallel to the axis of cam d. None of the above ion is b. parallel to the axis of cam d. None of the above is b. parallel to the motion of cam
d. inclined to axis of cam s b. parallel to the axis of cam d. None of the above ion is b. parallel to the axis of cam d. None of the above is b. parallel to the motion of cam
b. parallel to the axis of cam d. None of the above ion is b. parallel to the axis of cam d. None of the above is b. parallel to the motion of cam
d. None of the above ion is b. parallel to the axis of cam d. None of the above is b. parallel to the motion of cam
d. None of the above ion is b. parallel to the axis of cam d. None of the above is b. parallel to the motion of cam
b. parallel to the axis of cam d. None of the above is b. parallel to the motion of cam
b. parallel to the axis of cam d. None of the above is b. parallel to the motion of cam
d. None of the above is b. parallel to the motion of cam
b. parallel to the motion of cam
b. parallel to the motion of cam
•
d. None of the above
b. base circle
d. prime circle
r motion and a normal to the pitch curve is
•
b. base angle
d. pitch angle
d move with
b. Uniform acceleration and retardation
d. Simple harmonic motion
follower should move with
b. Uniform acceleration and retardation
d. Simple harmonic motion
engines is
b. Flat faced follower
d. roller follower
o surfaces and is opposite to the direction of
b. Tensile force
d. Bending force
b. Dynamic friction
d. None of the above
rest is called
b. Static friction
d. Rolling friction
notion is called
b. Static friction
d. Dynamic friction
sliding motion is called
b. Static friction
d. Rolling friction
olling motion is called
b. Static friction
d. Rolling friction
rotation along its own axis is called
b. Pivot friction

c. Sliding friction	d. Rolling friction
28. The friction experienced between two dry ar	
28. The median experienced between two dry ar	id dilidbileated surfaces in contact is known as
a. Static friction	b. Dry or Solid friction
c. Fluid friction	d. Thin film lubrication
29. The friction experienced between two surface	
lubricant is known as	ics in contact, when there is very thin layer of
a. Static friction	b. Dry or Solid friction
c. Fluid friction	d. Thin film lubrication
30. The friction experienced between two surface	
lubricant is known as	its in contact, when there is very thick layer or
a. Static friction	b. Dry or Solid friction
c. Fluid or viscous friction	d. Thin film lubrication
31. The force of friction always acts in the directi	
move or is moving.	to that in which body tends to
a. Similar	b. Perpendicular
c. Opposite	d. Inclined
32. The ratio of limiting friction and normal react	
a. Constant	b. Varying
c. Zero	d. Unity
33. The value of dynamic friction	slightly with increase of speed of motion.
a. Increase	b. Decrease
c. Remains constant	d. Turns to zero
	or different lubricants.
a. Different	b. Same
c. Zero	d. None of the above
	he increase of temperature of lubricant.
a. Remains constant	b. Increase
c. Decrease	d. Turns to Zero
36. In the equation of torque to lower the load in	
a. The condition is called Self locking of screw	b. The condition is called Overhauling of screw
c. The condition is called Thrust of screw	d. None of above.
37. In the equation of torque to lower the load in	
a. The condition is called Self locking of screw	b. The condition is called Overhauling of screw d. None of above.
c. The condition is called Thrust of screw	d. None of above.
38. Plate or Disc clutch is the type of	h Hudraulia alutah
a. Electromagnetic clutch	b. Hydraulic clutch d. None of the above.
c. Mechanical clutch	
39. Which of the following are the types of friction	
a. Disc clutch	b. Cone clutch
c. Centrifugal clutch	d. All the above
40. Following are the types of plate clutch	h Mariatina a alivada
a. Single plate clutch	b. Multiplate clutch
c. Both single and multiplate clutch	d. None of the above
41. Disc brake is the type of	T
a. Mechanical brake	b. Electric brake
c. Hydraulic brake	d. Pneumatic brake
42. Following are the types of Electric Brake	T
a. Disc brake	b. Band brake

c. Shoe brake	d. None of the above.	
43. Following are the types of Shoe brake		
a. External shoe brake	b. Internal shoe brake	
c. Both internal and external shoe brake	d. None of the above.	
44. Which of the following is used to retard or stop the motion and also measure the power		
absorbed during the braking		
a. Brake	b. Dynamometer	
c. Both brake and dynamometer	d. None of the above	
45. Which of the following is widely used in autor	mobiles	
a. Brake	b. Dynamometer	
c. Both brake and dynamometer	d. None of the above	
46. Which of the following is a laboratory device and is used only when needed		
a. Brake	b. Dynamometer	
c. Both brake and dynamometer	d. None of the above	
47. The effort is not required to be applied on the screw jack for its downwards motion, if		
a. Φ = α	b. Φ < α	
c. Φ > α	d. Φ = 0	
48. The effort is required to be applied on the screw jack for its downwards motion, if		
a. Φ = α	b. Φ < α	
c. Φ > α	d. Φ = 0	
49. Dynamometer is used to measure		
a. coefficient of friction	b. Power of prime mover	
c. Speed and power of prime mover	d. None of the above	
50. The ratio of limiting friction to the normal reaction is known as		
a. Coefficient of friction	b. Angle of friction	
c. Efficiency of friction	d. Performance of friction	

Chapter 5: Flywheel and Governor		
Which of the following serves the purpose of reservoir		
a. Governor	b. Flywheel	
c. Both governor and flywheel	d. None of the above	
2. In Machines when the supply of energy is more than the requirement, the flywheel		
the energy.		
a. Stores	b. Releases	
c. Increases	d. Decreases	
3. In Machines when the requirement of energy i	s more than the supply, the flywheel	
the energy.		
a. Stores	b. Releases	
c. Increases	d. Decreases	
4. In IC engine during the power stroke, the excess energy is by the flywheel.		
a. Absorbed	b. Released	
c. Increased	d. Decreased	
5. In IC engine during the suction, compression and exhaust stroke, the energy is by		
the flywheel.		
a. Absorbed	b. Released	
c. Increased	d. Decreased	

- C	h Caral
a. Connecting rod	b. Crank
c. Crankshaft	d. Piston
7. The flywheel stores energy by virtue of its	
a. Mass	b. Speed
c. Both mass and speed	d. None of the above
8. The flywheel cannot control the	
a. Quality of working media	b. Fluctuation of speed
b. Fluctuation of energy	d. All the above
9. Following is the type of flywheel	T
a. Disc type	b. Rim and arm type
c. Split type	d. All the above
10. Flywheels up to 600 mm diameter are comm	
a. Disc type	b. Rim and arm type
c. Split type	d. None of the above
11. Flywheels of size between 600 mm to 2500 r	
a. Disc type	b. Rim and arm type
c. Split type	d. None of the above
12. Flywheels of size than 2500 mm diameter ar	e commonly of type.
a. Disc type	b. Rim and arm type
c. Split type	d. None of the above
13. Which of the flywheel is made of very large s	size
a. Disc type	b. Rim and arm type
c. Split type	d. All of the above
14. The turning moment available at the crank s	haft is represented in form of graph, known as
a. Turning moment diagram	b. Force Moment diagram
c. crankshaft diagram	d. Displacement diagram
15. In Turning moment diagram, x - axis indicate	S
a. Torque	b. Crank angle
c. Moment	d. Force
16. In turning moment diagram, the turning mor	nent is represented on
a. XY – line	b. Z - axis
c. X - axis	d. Y - axis
17. The total area under the curve of Turning mo	oment diagram shows
a. Volume of the Engine	b. Work done per cycle by the crank shaft
c. Force generated during the cycle	d. Displacement of crank during the cycle
18. Turning moment diagram is used to	
a. Carry out force analysis	b. Calculate the power available at the crank shaft
c. To find Mean torque	d. All the above
19. The Crank shaft speed increases and work is	done by steam when
a. Engine torque is greater than mean torque	b. Engine torque is less than mean torque
c. Engine torque is equal to mean torque	d. Engine torque is Zero
20. The Crank shaft speed decreases and work is	
a. Engine torque is greater than mean torque	b. Engine torque is less than mean torque
c. Engine torque is equal to mean torque	d. Engine torque is Zero
	torque and T _m = Mean torque)

	T
a. Flywheel speed increases and it stores the	b. Flywheel speed decreases and it releases the
energy	energy
c. Flywheel stops	d. Flywheel rotates with constant speed
22. When $(T - T_m)$ is negative (where, $T = Engine$	
a. Flywheel speed increases and it stores the	b. Flywheel speed decreases and it releases the
energy	energy
c. Flywheel stops	d. Flywheel rotates with constant speed
23. To minimize variation in the resultant turning	moment diagram of double cylinder double
acting steam engine	
a. Both the cranks are fixed on the crank shaft	b. Both the cranks are fixed on the crank shaft
at 45 deg	at 60 deg
c. Both the cranks are fixed on the crank shaft	d. Both the cranks are fixed on the crank shaft
at 90 deg	at 30 deg
24. To minimize variation in the resultant turning	moment diagram of three-cylinder double acting
compound cylinder.	
a. The three cranks are fixed on the crank shaft	b. The three cranks are fixed on the crank shaft
at 90 deg	at 120 deg
c. The three cranks are fixed on the crank shaft	d. The three cranks are fixed on the crank shaft
at 180 deg	at 270 deg
25. In turning moment diagram for four stroke IC	
cylinder is below atmospheric pressure, hence	0 0
a. Large value of positive loop of TMD is	b. Greater value of negative loop of TMD is
available.	available
c. Negative loop for the portion of this stroke is	d. No loop is available
available.	
26. In turning moment diagram for four stroke IC	engine during compression stroke the work is
done on the gas, hence	0 0
a. Large value of positive loop of TMD is	b. Greater value of negative loop of TMD is
available.	available
c. Negative loop for the portion of this stroke is	d. No loop is available
available.	
27. In turning moment diagram for four stroke IC	engine during expansion stroke the gases
expand and work is done by the gas, hence	0 - 1 - 0 - p - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
a. Large value of positive loop of TMD is	b. Greater value of negative loop of TMD is
available.	available
c. Negative loop for the portion of this stroke is	d. No loop is available
available.	
28. In turning moment diagram drawn for the wo	orking cycle of the machine, the fluctuation of
energy is shown by	of one of the machine, the national of
a. Mean torque line	b. the portion above and below the mean
	torque line
c. X – axis	d. Y – axis
29.The Maximum fluctuation of energy is obtained	
a. Difference between maximum energy and	b. Sum of maximum energy and minimum
minimum energy	
c. Average of maximum energy and minimum	d. None of the above.
	a. Notic of the above.
energy 20. The coefficient of fluctuation of energy is	
30. The coefficient of fluctuation of energy is	h. The ratio of minimum energy to the
a. The ratio of Maximum energy to the	b. The ratio of minimum energy to the
minimum energy	maximum energy

c. The ratio of maximum fluctuation of energy	d. Sum of maximum and minimum energy	
to the work done per cycle		
31. The maximum fluctuation of energy is defined		
a. The difference between the maximum	b. Sum of maximum and minimum available	
available and minimum available speed of the	speed of the flywheel	
flywheel/engine during one working cycle.		
c. Average of maximum and minimum available	d. None of the above	
speed of the flywheel		
32. Coefficient of fluctuation of speed is defined	I	
a. The ratio maximum speed to minimum speed	b. The ratio of minimum speed to maximum	
	speed	
c. The ratio of maximum fluctuation of speed	d. None of the above.	
and mean/average speed.		
33. The coefficient of fluctuation of speed is given		
a. $\frac{2(N1-N2)}{(N1+N2)}$	b. $\frac{2(\omega 1 - \omega 2)}{(\omega 1 + \omega 2)}$	
(N1+N2) 2(V1-V2)	i ' '	
c. $\frac{2(V1-V2)}{(V1+V2)}$	d. All the above	
34. The coefficient of steadiness is defined as		
a. Equal to coefficient fluctuation of speed.	b. Reciprocal of coefficient of fluctuation of	
44.	speed	
c. Twice the coefficient fluctuation of speed	d. Half of the coefficient fluctuation of speed	
35. The maximum fluctuation of energy ΔE is calc	·	
a. $I\omega^2C_s$	b. mk²ω²C _s	
c. 2EC _s	d. All the above	
36. Which of the following automatically controls		
maintains the mean speed within the limit	the quantity of fuer supplied to the engine and	
a. Flywheel	b. Governor	
c. Both flywheel and governor	d. None of the two.	
37. When the engine speed increase due to decre		
governor	27 the	
a. Decreased	b. Increased	
c. Cut out	d. kept constant	
38. When the engine speed decrease due to incre		
governor	by the	
a. Decreased	b. Increased	
c. Cut out	d. kept constant	
39. The purpose of flywheel and governor is to co		
principle.		
a. similar	b. 50% same	
c. different	d. 75% same	
40. The quality of working fluid is taken care by		
a. Flywheel	b. <mark>Governor</mark>	
c. Both	d. None	
41. Governor are classified mainly in following ty	pes	
a. Centrifugal governor	b. Inertia governor	
c. Both	d. None	
42. Watt governor is a type of		
a. Pendulum type	b. Dead weight type	
c. Spring loaded type	d. All the above	
43. Porter governor is a type of	1	

a. Pendulum type	b. Dead weight type
c. Spring loaded type	d. All the above
44. Hartnel governor is a type of	
a. Pendulum type	b. Dead weight type
c. Spring loaded type	d. All the above
45. For stable governor, if the equilibrium speed increases, the radius of rotation of must	
a. Increase	b. Decrease
c. Remain constant	d. becomes zero
46. For stable governor, if the equilibrium speed decreases, the radius of rotation of must	
a. Increase	b. Decrease
c. Remain constant	d. becomes zero
47. With little change in speed, when the governor sleeve also immediately exhibit a	
corresponding change in lift, then this the characteristic is known as	
a. Fluctuation	b. Stability
c. Sensitiveness	d. Hunting
48. Stability and sensitiveness of governor are to each other	
a. Similar	b. Opposite
c. Equal	d. 50% similar
49. If the speed of the engine fluctuates continuously above and below the mean speed, a	
governor is said to be	
a. Stable	b. Hunt
c. Steady	d. None of the above
50.The product of Mean governor effort X Lift of sleeve is known as	
a. Governor Power	b. Governor speed
c. Governor acceleration	d. Governor force