University of Mumbai
Online Examination 2020
Program: BE Automobile Engineering
Curriculum Scheme: Revised 2012
Examination: Third Year Semester V

Course Code & Course Name: AEC 504 THEORY OF MACHINES-III

Q NO	QUESTION	OPTIONS			
		A	B	C	D
1	The frictional torque transmitted in a conical clutch, considering uniform wear, is	1/2 μ W R cosec(alpha)	2/3 μ W R cosec(alpha)	3/4 μ W R cosec(alpha)	μ W R cosec(alpha)
2	The following clutch is known as dry friction clutch	Cone Cluch	Centrifugal Cluch	Single plate Cluch	Multiplate
3	The mean radius of plate clutch in uniform wear theory is	(r1-r2)/2	(r1+r2)/2	r1+r2	r1 - r2
4	In centrifugal clutch, floating occurs when	the centrifugal force is equal to spring force	the centrifugal force is greater than spring force	the centrifugal force is less than spring force	no spring force
5	Rope brake dynamometer uses	oil as lubricant	water as lubricant	grease as lubricant	no lubricant
6	The brakes commonly used in motor cars is	Shoe brake	band brake	band and block brake	internal expanding
7	Drum brake used in lap former is	Self locking brake	Self acting brake	Partial self-energizing brake	None of the above
8	For 80 rpm the height of a Watt's governor is equal to	22,36 mm	11.18 cm	5.59 cm	0.1398 m
9	In a Hartnell governor, the stiffness of the spring is given by	(S2-S1)/2h	(S2+S1)/h	(S2-S1)/h	(S2+S1)/2h
10	For isochronous Hartnell governor	S1/S2=r1/r2	(mg-S1)/(mg-	(mg+S1)/(mg+S2)=r	S1/S2=r2/r1
11	In a Porter governor, if the dead weight is removed, then	It will not be usable	it becomes Watt governor	Its efficiency will increase	it becomes Proell governor
12	The ratio of height of porter governor (when length of arms and links are equal) to the height of watt governor is (Where m is the mass of the ball and M is the mass of sleeve)	M/(m+M)	(m+M)/m	m/(m+M)	m/(M-m)
13	The engine of an aeroplane rotates in Anticlockwise direction when seen from the tail end and the aeroplane takes a turn to the left. The effect of gyroscopic couple on the aeroplane will	To dip the nose and raise the tail	To raise the nose and tail	To raise the nose and dip of the tail	To dip the nose and tail

#	Question	A	B	C	D
14	The axis of precession is _____ to the plane in which the axis of spin is going to rotate.	perpendicular	parallel	spiral	not related
15	A motor car moving at a certain speed takes a left turn in a curved path. If the engine rotates in the same direction as that of wheels, then due to the centrifugal forces	the reaction on the outer wheels increases and on the inner wheels decreases	the reaction on the inner wheels increases and on the outer wheels decreases	the reaction on the front wheels increases and on the rear wheels decreases	the reaction on the rear wheels increases and on the front
16	The pitching of ship produce force on bearing which act ....to the motion of ship	vertically and parallel	horizontally and perpendicular	vertical and perpendicular	horizontal and parallel
17	Which type of gear train is used in clock mechanism to join hour hand and minute hand?	Simple gear train	Compound gear train	Reverted gear train	Epicyclic gear train
18	In a simple gear train,if the number of idle gears is odd,then the motion of driver gear will	be same as that of the driving gear	be opposite as that of driving gear	depend upon the number of teeth on the driving gear	not rotate
19	The train value of a gear train is	equal to the velocity ratio of a	reciprocal of velocity ratio of a	always greater than unity	always less than unity
20	In a gear train, when the axes of the shafts, over which the gears are mounted, move relative to a fixed axis, is called	Simple gear train	Compound gear train	Reverted gear train	Epicyclic gear train
21	When the axes of the first and last wheels are co-axial, then the train is known as	reverted gear train	compound train of wheels	simple train of wheels	epicyclic gear train
22	Correction couple is appied on the system to make it	Zero couple system	Zero force system	Dynamic Equivalent system	Inverted mass system
23	Find total length of Connecting rod (cm) if its radius of gyration is 30 cm and it is to be replced by two mass dynamic equivalent system of 5 kg and 8 kg masses.	92.48	123.32	30.83	61.66
24	Find mass moment of inertia(Kg.m^2) for a dynamic equivalent system of two masses placed at 10 cm and 15 cm from CG with total mass 20 kg	30	0.6	1.2	0.3
25	Torque required to accelerate connecting rod or dynamically equivalent system is	2.m.k.α	m.(k^2).α	(m.k.α)/2	m.k.(α^2)