

CLASS : XITH SUBJECT : PHYSICS DATE : DPP NO. : 2

	То	pic :- SYSTEI				ROTATIONAL		, i
1.			ıniforn		a dia	meter is I . Its mome		inertia about an axis
	a)	5 <i>I</i>	b)	31	c)	61	d)	41
2.		ngular velocity of a during that time is		l increases from 100	rps t	o 300rps in 10 s. The	e num	nber of revolutions
	a)	600	b)	1500	c)	1000	d)	2000
3.	the ro	od is	of len	gth 3 m varies as λ =	2+ <i>x</i> , t	then the position of	the c	entre of gravity of
	a)	$\frac{7}{3}$ m	b)	$\frac{12}{7}$ m	c)	$\frac{10}{7}$ m	d)	$\frac{9}{7}$ m
4.		-	nas a n	noment of inertia of	160	kg-m² about its ow	n axis	, the radius of
	a)	on will be 10 m	b)	8 m	c)	6 m	d)	4 m
5.	mass.		of the			circular disc of radions of the case of th		
	a)	$1 kg-m^2$	b)	$0.1 kg$ - m^2	c)	$2 kg-m^2$	d)	$0.2 \ kg$ - m^2
6.	If the a)	external torque ac $\omega = 0$		n a system $ec{ au}=0$, th $lpha=0$	en c)	J = 0	d)	F = 0
7.	arms table			_		and the same of th	-	s centre. She pulls her ngular speed of turn n^2

8. Two spherical bodies of the same mass M are moving with velocities v_1 and v_2 . These collide perfectly inelastically

a)
$$\frac{1}{2}M(v_1-v_2)^2$$
 b) $\frac{1}{2}M(v_1^2-v_2^2)^2$ c) $\frac{1}{4}M(v_1-v_2)^2$ d) $2M(v_1^2-v_2^2)$

9. A mass m is moving with a constant velocity along a line parallel to x-axis. Its angular momentum with respect to origin an z-axis is

- a) Zero
- b) Remains constant c)
- Goes on increasing d)

a)

Which is a vector quantity

19.

He pulls his arms b)

and legs in

10.

None of the above

He keeps himself d)

straight

11.		string and pulle	_		_		f masses m and tem is released,				
	a) Zero		b)	$-\frac{g}{4}$		c)	$\frac{g}{2}$	d)	$-\frac{g}{2}$		
12.	One solid sphere A and another hollow sphere B are of same mass and same outer radius. Their moments of inertia about their diameters are respectively I_A and I_B such that										
	a) $I_A =$	$=I_B$	b)	$I_A > I_B$	3	c)	$I_A < I_B$	d)	$\frac{I_A}{I_B} = \frac{d_A}{d_B}$		
13.	at an angle horizontal,	α to the horizonts angular velocity	ontal ocity	and allow will be	wed to fall	witho	ntact with the ho ut slipping at cor	ntact poi	nt. When it beco	mes	
	a) ω	$=\sqrt{\frac{3g\sin\alpha}{2L}}$	b)	ω =	$\sqrt{\frac{2L}{3g\sin\alpha}}$	c)	$\omega = \sqrt{\frac{6g \sin^2 2L}{2L}}$	<u>n α</u> d)	$\omega = \sqrt{\frac{2L}{g\sin\theta}}$	<u>α</u>	
14.	released sin bottom of t	multaneous <mark>ly f</mark> the inclin <mark>e is</mark>	rom t	he same	height of	incline	here (S) of the s The order in wh	nich thes	e bodies reach t		
	a) SC, H	C, S	b)	SC, S, H		c)	S, SC, HC	a)	HC, SC, S		
15.		2, 4, 2 kg are place of ce					respectively of a	square A	ABCD of diagona	al	
	a) 20 <i>c</i>	cm	b)	30 cm	_	c)	40 cm	d)	60 cm		
	M			8.	Г		E		RI		
16.	The moment of inertia of a solid sphere about an axis passing through centre of gravity is $\frac{2}{5}MR^2$,										
	then its radius of gyration about a parallel axis at a distance $2R$ from first axis is										
	a) 5 <i>R</i>	.0	b)	$\sqrt{\frac{22}{5}}R$		c)	$\frac{5}{2}$ R	d)	$\sqrt{\frac{12}{5}}R$		
17.		of radius 2 <i>cn</i> at is the shift in					cm. If the distan	ce betwe	en their centres	is	
	a)	$0.4 \ cm$	b)		2.4 <i>cm</i>	c)	1.8 <i>cm</i>	d)	1.2 <i>cm</i>		
18.	A solid cylir	nder of mass <i>M</i>	and	radius R	rolls with	out slip	oping down an in	iclined pl	ane of length L a	and	

height h. What is the speed of its centre of mass when the cylinder reaches its bottom

A swimmer while jumping into water from a height easily forms a loop in the air, if

c)

He spreads his

arms and legs

2

 $\sqrt{2gh}$

a) Work b) Power c) Torque d) Gravitational Constant

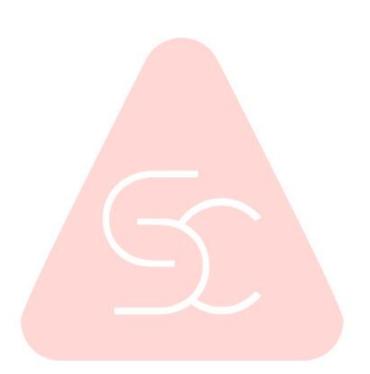
20. What is the moment of inertia of solid sphere of density ρ and radius R about its diameter?

a)
$$\frac{105}{176}R^5\rho$$

b)
$$\frac{105}{176}R^2\rho$$

b)
$$\frac{105}{176}R^2\rho$$
 c) $\frac{176}{105}R^5\rho$

d)
$$\frac{176}{105}R^2\rho$$



SMARTLEAR COACHING