Seat	
No.	01625

B.Sc. (Part - I) (Semester - I) (CBCS) Examination, November - 2018

PHYSICS (Paper - II)

Mechanics - II

Sub. Code: 71604

ouc. /1	004			
	Total Marks: 50			
mpulsory.				
2) Figures to the right indicate full marks. 3) Draw neat labeled diagrams wherever necessary.				
4. 6.11				
the follow	ving: [10]			
not depen	d on			
b)	mass of the earth			
d)	mass of the satellite			
i holds the	e planets in their orbits around the			
action.				
b)	nuclear			
d)	gravitational			
ant is				
	Nm² kg-²			
d)	Nm kg s ⁻²			
body is s	aid to be heavily damped, if the			
e restorin	of force			
h)	much less than			
1 1 1	less than			
body abo	out its mean position only under			
veloped is	s called oscillatory motion.			
b)	free			
d)	forced			
ne end ar	nd loaded at the other is called as			
	at the other is called as			
1.5	1			
D)	loaded beam			
d)	unloaded beam			
	mpulsory. indicate full liagrams we relator is all the follownot depend b) a holds the action. b) ant is b) body is see restorine b) d) body aboveloped is b)			

	a)	$\frac{1}{2}c\theta$	b)	$\frac{1}{2}c\theta^2$		
	c)	$c\theta^2$	d)	cθ		
viii)	Tor	rsional oscillations of a wire a	re due	to its		
1,310,03000	a)	Modulus of rigidity	b)	Young's modulus		
	c)		d)	High density		
ix)	A li	quid wets on the solid surface	if the	angle of contact between them is		
	a)	a right angle	b)	an acute angle .		
	2)	an obtuse angle	d)	π radion		
x) 7	Γwο		drop	s of water between them can be		
S	epa	rated from each other by				
а)	pulling them apart normal to	the su	rface		
ь)	sliding them parallel to their p				
с)	increasing some more water between them				
d)	introducing some oil between them				
Attemp	ot ar	ny TWO of the following:		[20]		
) E2	kpla	in the motion of particle in ce	entral that i	force field, show that its angular ts areal velocity remains constant.		
) W	hat	are forced oscillations? Deri	ve di	ferential equation for a damped and frequency of oscillator are		

- Derive the expression for bending moment of a horizontal beam fixed at one end and loaded at other.
- Q3) Attempt any FOUR of the following:
 - a) Explain in detail geosynchronous orbits and geostationary satellite.
 - b) A bar of 80 cm long, having breadth and depth 0.5 cm each is supported horizontally at its ends. The depression produced at the middle by a load of 200 gm is 2 mm. Calculate Young's modulus of material of bar.
 - c) State Kepler's laws of planetary motion.

affected by the applied periodic force.

(22)

- d) Derive the expression for the depressions of the centrally loaded beams supported at both the ends.
- e) Describe the Jaeger's method to determine surface tension of a liquid.
- f) Explain some applications of surface tension.

