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Scheme of Valuation

Revision : 2015 Title :Engineering Physics II				Course code: 2003
Qust. No	Scoring indicator	Split up score	Sub Total	Total
I 1	Part. A Outer edge of the road is raised above the inner edge at sharp curves to avoid skidding due to centripetal force. Or $\tan\theta = v^2/rg$ explanation of terms		2	
2	Any 2 uses	1,1	2	
3	Definition, 11.2km/sec	1,1	2	10
4	Statement and equation V=IR	1,1	2	
5	Any 3characteritics	,	2	
II 1	Part.B Definition derivation $v = r\omega$	3 3	6	
2	Parallel axis theorem –Fig Equation with explanation Perpendicular axis theorem- Fig equation with explanation	1 2 1 2	6	
3	Statement or figure with equation Derivation $g = GM/R^2$ with explanation of terms	3 3	6	
4	Orbital velocity (very close to earth) $V_o = \sqrt{(Rg)}$ $= \sqrt{(6400X10^3 X9.8)}$ =7920m/s (Substitution and calculation) =7.92km/s (Correct answer with unit)	2 2 2	6	30
5	Laws with figure or equation Wheatstones bridge figure Derivation	3 1 2	6	

Scheme of Valuation

6	Law statement with equation and explanation of terms	2		
	Flux density at the centre of a circular current carrying coil			
	$B=\mu_0 nI/2R$			
	$n=2RB/\mu_0 I$	1		
	$=2x0.2x30x10^{-4}/(4\pi x10^{-7})$	2		
	$=956$	1	6	
7	Chain reaction	2		
	Reactor figure	2		
	Parts and working	2	6	
	Part. C			
III a)	Centripetal force definition with equation $F=mv^2/r$ or $F=mr\omega^2$	2		
	Example	1	3	
b)	Centripetal force $F=mv^2/r$	2		
	$M=2kg, v=3m/s, r=0.5m$ (substitution+ calculation)	2		
	$F=mv^2/r=36N$ (Answer with unit)	2	6	
c)	Angular velocity $\omega=\theta/t$, $\theta=2\pi$ rad,			
	$\omega_m=2\pi/60x60=1.74x10^{-3}$ rad/sec	3		
	$\omega_s=2\pi/60 \quad =1.04x10^{-1}$ rad/sec	3	6	15

Scheme of Valuation

IV a)	Definition SI unit	2 1	3	
b)	Figure Explanation of terms and figure Derivation $I=MR^2/2$	1 2 3	6	
c)	Rotational $KE=1/2I\omega^2=100J$ Moment of inertia $I=8x10^{-4}\ kgm^2$ $\omega=\sqrt{2KE/I}=(\sqrt{2x100/}/8x10^{-4}=500rad/sec$ Angular momentum $L=I\ \omega=8x10^{-4}\ x500=40x10^{-2}\ kgm^2rad/sec^2$	3 3	6	15
V a)	Definition Applications	1 2	3	
b)	Definition Figure Derivation $Vo=\sqrt{GM/R}$,	1 1 4	6	15
c)	$m_1=40kg$, $m_2=20kg$, $r=0.5m$, $F=1.3x10^{-6}N$ $G=\frac{Fr2}{m1m2}$ $=6.5x10^{-11}Nm^2kg^{-2}$ (Answer with unit)	2 2 2	6	
VI a)	Definition Expression and terms	1 2	3	15
b)	Derivation $gh=g(1-2h/R)$ with figure Derivation $gd=g(1-d/R)$ with figure	3 3	6	
c)	$Vo=\sqrt{GM/R}$, $G=6.67x10^{-11}Nm^2kg^{-2}$, $M=6x10^{24}kg$, $R=6400km$ $Vo=7.92km/s$ $To=2\pi\sqrt{R^3/GM}$ Substitution $To=5083seconds$	1 1 1 1 1 1	6	

Scheme of Valuation

VII a)	$F=BIl\sin\theta$ with explanation of terms	2		
	Fleming's left hand rule	1	3	
	Principle	1		
b)	Figure	1		
	Working	4	6	15
c)	$S=I_gG/(I-I_g)$ Equation	2		
	Substitution	2		
	S=0.2013 Ω Answer with unit	2	6	
VIII a)	Shunt resistance in parallel	1		
	Diagram with equation	2	3	
b)	Principle	2		
	Diagram	1		
	Working with derivation $R= Xl/(100-l)$	3	6	
c)	G=50 Ω, E=5V, I=10mA	2		
	$R=E/I-G$	2		
	=450 Ω (Answer with unit)	2	6	15
IX a)	Any 3 advantages	3	3	
b)	Diagram	2		
	Working	4	6	
c)	Laws	3		
	Applications	3	6	15

Scheme of Valuation

X a)	Fusion definition	2	3	
	Equation ${}_1H^1+{}_1H^1 \rightarrow {}_2He^4$+Energy	1		
b)	3 alternative energy sources	2		
	$E=hc/\lambda$(Equation)	1		
	$=6.63\times10^{-34}\times3\times10^{8}/400\times10^{-9}$ (Substitution)	1		
	$=4.9725\times10^{-19}J$ (Result with unit)	2	6	
c)	$hc/\lambda=W+KE$ Equation	1		
	$W= hc/\lambda-KE= (6.63\times10^{-34}\times3\times10^{8} /100\times10^{-9})-10^{-18}$ $=0.989J$	2		
	Threshold frequency $\nu_0 =W/h=0.989/6.63\times10^{-34}$ $=0.1491\times10^{34}Hz$	3	6	15

CODE: TED(15) 2003

COURSE: ENGINEERING PHYSICS II VERSION: SET

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Sl No.	Module	Type of Questions							
		Part A		Part B		Part C		Total	
		No. of Questions	Score	No. of Questions	Score	No. of Questions	Score	No. of Questions	Score
1	I	1	2	2	12	2	30	5	44
2	II	2	4	2	12	2	30	6	46
3	III	1	2	2	6	2	30	5	44
4	IV	1	2	1	6	2	30	4	38
Total		5	10	7	36	8	120	20	172

Signature : Dhanya

Name : Dhanya. N. P

Designation : Assistant Professor (Physics)

Institution : Government Polytechnic college, Kunnamkulam

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QUESTION WISE ANALYSIS

COURSE : ENGINEERING PHYSICS II

CODE : TED(15) 2003

VERSION: SET

Qn No	Specific outcome (as per syllabus)	Module	Content Details	Score	Time in minutes
I.1	Apply	I	2.1.5	2	3
I.2	Mention	II	2.2.7	2	3
I.3	Mention	II	2.2.4	2	3
I.4	State	III	2.3.2	2	3
I.5	Understand	IV	2.4.2	2	3
II.1	Define, Derive	I	2.1.2,2.1.3	6	9
II.2	Explain	I	2.1.6	6	9
II.3	State, Derive	II	2.2.1	6	9
II.4	Apply	II	2.2.2	6	9
II.5	Analyse	III	2.3.6	6	9
II.6	Analyse	III	2.3.8,2.3.13	6	9
II.7	Analyse	IV	2.4.12	6	9
III.a	Apply	I	2.1.6	3	4
III.b	Problem	I	2.1.16	6	13
III.c	Analyse	I	2.1.3	6	13
IV.a	Understand	I	2.1.9	3	4
IV.b	Derive	I	2.1.8	6	13
IV.c	Problem	I	2.1.13	6	13
V.a	Mention	II	2.2.2	3	4
V.b	Problem	II	2.2.7	6	13
V.c	Problem	II	2.2.3	6	13
VI.a	Understand	II	2.2.1	3	4
VI.b	Analyse	II	2.1.1	6	13
VI.c	Problem	II	2.2.6	6	13

DATE: 29/03/19

CONFIDENTIALITY CERTIFICATE

(To be signed by the Question Setter and returned along with the question paper)

Subcode : 2003

Subject Name : ENGINEERING PHYSICS - II

Version : SET

I certify that:

1. I have read the instructions carefully and agree to them.
2. I have very carefully gone through the syllabus prescribed for the examination for which the paper has been set by me. The paper set does not include any question, which is outside the scope of the syllabus.
3. The questions are distributed evenly over the whole syllabus.
4. The proper Scheme of Valuation is prepared and submitted.
5. The question paper and Scheme of Valuation has been typed/printed by me personally.
6. I have destroyed all drafts, notes etc., of the questions set and have retained no copy of the paper with me.
7. I have destroyed the electronic versions of the question ensuring that the same can not be regenerated.
8. I am not the author of any help, book prescribed or recommended in the subject of which I am the paper setter.

29/03/19

Signature of Setter

Name DHANYA . N . P

username (tekerala) dhanyanp

Designation with Institution Assistant Professor (Physics)

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