TED (21) 1003

(Revision-2021)

Reg.No.............................

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER – 2022

APPLIED PHYSICS - I

[Maximum marks: 75]   (Time: 3 Hours)

PART A

I. Answer all questions in one word or one sentence. Each question carries one mark

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	Candela is the unit of …………..	M1.01	R
2	…… is the resistance of a body to any change in its state of rest or uniform motion along a straight line.	M1.04	R
3	The analogous physical quantity of force in circular motion is…….	M2.01	R
4	Define angular velocity.	M2.01	R
5	Write one example of work done by gravitational force.	M3.01	U
6	The slowest mode of heat transfer is ……….	M3.04	U
7	Pick out odd one from the following: Surface tension, Capillarity, Viscosity, Rigid body.	M4.02 M4.03	U
8	What is elastic limit?	M4.01	R
9	The viscous force F = 6π ……r v	M4.03	R

PART B

II. Answer any eight questions from the following. Each question carries three marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Some quantities are obtained from fundamental quantities. (a) Name these quantities (b) By what name the units of these quantities are known? (c) Name a quantity of this kind and its unit.	M1.01	U
2	Write a brief note on the banking of railway track.	M2.01	R
3	Two substances A and B supplied with same amount of heat for the same time. The temperature of B shows more than that of A. Which substance have greater specific heat? Give reason.	M3.04	U
4	Correct the following statements (a) Pyrometer is a contact thermometer (b) Mercury thermometer is a gas thermometer (c) Degree celcius temperature can be converted to Kelvin scale by subtracting 273	M3.04	U

5	Briefly explain two practical application of thermal conductivity.	M3.04	U
6	Briefly explain potential energy? Give an example.	M3.02	R
7	Discuss two methods to reduce friction.	M3.01	U
8	Match the following 	Column A	Column B
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Volume per unit time	No unit
Stress	N/m
Strain	Nsm^{-2}
Surface tension	1×10^5 pa
Viscosity	Av
1 Atmospheric pressure	N/m^2
	N-m/s
	$Kg-m^2$		M4.01, M4.02, M4.03, M4.04	U
9	Give molecular theory of surface tension	M4.02	R
10	Write equation of continuity	M4.04	R

PART C
Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	In Physics laboratory, a student measures mass of a body. He repeat the experiment and the mass the body is obtained as 45.5 gm. 45.1 gm, 46 gm and 45.8 gm. Find the percentage of error in his experiment.	M1.02	A
	OR		
IV	Explain the principle of rocket propulsion and recoil of gun	M1.04	U
V	(a)Make a comparative study of linear and analogous angular physical quantities you studied. (b)Deduce the relationship between linear acceleration and angular acceleration.	M2.01	U
	OR		
VI	(a)Briefly explain the term 'moment of inertia'. (b)State and explain the theorems of moment of inertia	M2.02	R
VII	(a)What is the meaning errors in measurement? (b)Discuss about the possible errors in measurements	M1.02	U
	OR		
VIII	Determine the angular acceleration of a wheel that starts from rest and attains a speed of 300 rotation per minute in 60 s	M2.01	A
IX	An engine develops 20kW of power. How much time will it take to lift a mass of 100 kg to height of 50 m. **OR**	M3.03	A

X	Discuss different modes of heat transfer	M3.04	U
XI	(a) Explain the property elasticity with examples (b) Explain young's modulus of elasticity **OR**	M4.01	R
XII	(a)Differentiate between streamline flow and turbulent flow (b) What do you mean by equation of continuity in fluid dynamics?	M4.04	U

XIII	Convert the temperature zero degree Fahrenheit into
	  (i) Degree celcius and
	  (ii) Kelvin scale
	OR
		M3.04	A

XIV	Explain the applications of Bernoulli's theorem.	M4.04	R

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