	Λ	2014	प्रश्नपस्तिका क्रमांक		13.
		प्रश्नपुस्तिका	BOOKLET NO.		2
		चाळणी परीक्षा		एकण प्रश्न : 80	
वेळ	: 3 (तीन) तास	यंत्र अभियांत्रिक	Ì	एकूण गुण : 200	
		सूचना			
(1)	<u>सदर प्रश्नपुस्तिकेत 80 अनिवार्य प्रश्न आहेत.</u> आहेत किंवा नाहीत याची खात्री करून घ्यावी	उमेदवारांनी प्रश्नांची उत्तरे असा तसेन अन्य काही	लिहिण्यास सुरुवात करण्यापूव टोष आदललाम ही प्रश्नामि	ीं या प्रश्नपुस्तिकेत सर्व प्रश्न तका समवेशकांकटन लगेन	1
	बदलून घ्यावी.		पाप आढळल्पास हा प्ररम्पुार		·
(7)	भएका प्रीशा क्यांक टा चौकोनांत	יאודינא וואיזי			
(2)	न विसरता बॉलपेनने लिहावा.	केंद्र	个. ाची संकेताक्षरे	शेवटचा अंक	मु
(3)	वर छापलेला प्रश्नपुस्तिका क्रमांक तुमच्या उत्त	रपत्रिकेवर विशिष्ट जागी उ		 विसरता नमूद करावा.	106
(4)	या प्रश्नपुरितकताल प्रत्यक प्रश्नाला 4 पंयाया उत्तरांपैकी सर्वात योग्य उत्तराचा क्रमांक उत्तरप उत्तरक्रमांक नमूद करताना तो संबंधित प्रश्नक काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल व	उत्तर सुचावला असून त्यान त्रिकेवरील सूचनेप्रमाणे तुम मांकासमोर छायांकित करू 11 शाईंचे पेन वापरू नये.	ना 1, 2, 3 आणि 4 असे क्रम व्या उत्तरपत्रिकेवर नमूद कराव न दर्शविला जाईल याची काळ	ाक दिलेले आहेत. त्या चार a. अशा प्रकारे उत्तरपत्रिकेवर जी घ्यावी. ह्याकरिता फक्त	सील आ
(5)	सर्व प्रश्नांना समान गुण आहेत. यास्तव सर्व प्र वेगाने प्रश्न सोडवावेत. क्रमाने प्रश्न सोडविणे प्रश्नाकडे वळावे. अशा प्रकारे शेवटच्या प्रश परतणे सोईस्कर ठरेल.	<u>ाश्नांची उत्तरे द्यावीत</u> . घाईम् श्रेयस्कर आहे पण एखादा नापर्यंत पोहोचल्यानंतर वेव	नुळे चुका होणार नाहीत याची 1 प्रश्न कठीण वाटल्यास त्या 3 शिल्लक राहिल्यास कठीण	दक्षता घेऊनच शक्य तितक्य वर वेळ न घालविता पुढील म्हणून वगळलेल्या प्रश्नांकडे	नेविना हे
(6)	उत्तरपत्रिकेत एकदा नमूद केलेले उत्तर खोडता रं	पेणार नाही. नमूद केलेले उत्त	र खोडून नव्याने उत्तर दिल्यास व	ते तपासले जाणार नाही.	्व
(7)	प्रस्तुत परीक्षेच्या उत्तरपत्रिकांचे मूल्यांक तसेच ''उमेदवाराने वस्तुनिष्ठ बहुपर्यायी स नमूद करावीत. अन्यथा त्यांच्या उत्तरपरि करण्यात येतील''.	न करताना उमेदवाराच्या त्वरूपाच्या प्रश्नांची दिले त्रेकेत सोडविलेल्या प्रत्ये	उत्तरपत्रिकेतील योग्य उत्त ल्या चार पर्यायापैकी सर्वति क चार चुकीच्या उत्तरांसाट 	रांनाच गुण दिले जातील योग्य उत्तरेच उत्तरपत्रिकेत प्रे एका प्रश्नाचे गुण वजा	व्कांच्या स्
		ताकीद			वेक्ष
ਜ਼ਾ ਧਾਂ	ा प्रश्नपात्रकसाठा आयागाने विहित केर रीक्षाकक्षात उमेटवाराला परीक्षेमाठी वार	लला वळ सपपयत ही गरण्यास टेण्यात येतः	प्रश्नपुास्तका आयागाची आहे. ही वेळ संपेपर्यंत	मालमत्ता असून तो सदर प्रश्नपस्तिकेची	र्युः
<u> </u>	त/प्रती, किंवा सदर प्रश्नपुस्तिकेतीर	ठ काही आशय को	गत्याही स्वरूपात प्रत्य	क्ष वा अप्रत्यक्षपणे	Ψ
ייאן	ोणत्याही व्यक्तीस पुरविणे, तसेच प्रसि	द्ध करणे हा गुन्हा अस	रून अशी कृती करणाऱ्य	व्यक्तीवर शासनाने	L
क	या कल्ला ''गर्गधांग्रंगे रागाच्या '	गरप्रकारांना प्रतिबंध	करण्याबाबतचा अधि	नियम-82'' यातील 	
क क ज	त्वीस्तम स्तेन प्रत्यानय होगा या	वाववीनाणः कार्याती		नातना नगाल पत्र /	

पुढील सूचना प्रश्नपुस्तिकेच्या अंतिम पृष्ठावर पहा





3

- 1. $\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$ represents the equation for :
 - (1) Vibration of a stretched string
 - (2) Motion of a projectile in a gravitational field
 - (3) Heat flow in thin rod
 - (4) Oscillation of a simple pendulum

2. Solution of the differential equation $\frac{d^2y}{dx^2} + 4y = \sin^2 x$ is :

- (1) $C_1 \sin 2x + C_2 \cos x + \frac{1}{8} + \frac{x}{8} \sin 2x$ (2) $C_1 x + C_2 \cos x + \frac{1}{8} \frac{x}{8} \sin 2x$
- (3) $C_1 \cos 2x + C_2 \sin 2x + \frac{1}{8} \frac{x}{8} \sin 2x$ (4) $C_1 \cos 2x + C_2 \sin x + \frac{1}{8} + \frac{1}{8} \sin 2x$

3. The operation of making a cone shaped enlargement of the end of a hole is known as :

- (1) counter sinking (2) counter boring (3) trepanning (4) spot facing
- 4. A car travelling at a speed of 60 km/hour is braked and comes to rest 6 seconds after the brakes are applied. The minimum coefficient of friction between the wheels and the road would be :
 - $(1) \quad 0.107 \qquad (2) \quad 0.283 \qquad (3) \quad 0.3 \qquad (4) \quad 0.417$
- 5. Barometer is used to measure :
 - (1) velocity of liquid
 - (2) atmospheric pressure
 - (3) pressure in pipes and channels
 - (4) difference of pressure between two points in a pipe
- 6. Maximum fluctuation of energy in a flywheel is equal to ______ (notations have their usual meanings).
 - (1) $I\omega(\omega_1 \omega_2)$ (2) $I\omega^2 C_s$ (3) $2EC_s$ (4) All of these

SPACE FOR ROUGH WORK

P.T.O.

Α

studentBounty.com 4 RO3 7. The mathematical technique for finding the best use of limited resources in an optim manner is known as : (2)(1)operation research linear programming (3)network analysis (4)queuing theory The loss of available energy associated with the transfer of 1000 kJ of heat from a constant 8. temperature system at 600 K to another at 400 K when the environmental temperature is 300 K is : (1)166.67 kJ (2)250 kľ (3)500 kJ (4)750 kľ A ship whose hull length is 100 m is to travel at a speed of 10 m/sec. For dynamic similarity, 9. at what velocity should a 1 : 25 model be towed through water ? 10 m/sec(2)25 m/sec (3) 2 m/sec 50 m/sec (1)(4)10. The Gauss divergence theorem relates certain : (1)surface integrals to line integrals (2)vector quantities to other vector quantities (3)line integrals to other volume integrals (4) surface integrals to volume integrals 11. Whirling speed of a shaft coincides with the natural frequency of the ______ vibration. (1)longitudinal (2)transverse (3) torsional (4)coupled between torsional 12. In hot working process : Grain structure of the metal is refined. (1)(2)Porosity of the metal is largely eliminated. (3)Mechanical properties are improved. (4) All of the above 13. The lead time consumption is 500 units. The annual consumption is 8000 units. The company has a policy of EOQ ordering and maintenance of 200 units as safety stock. The reorder point (ROP) is : 500 units (1)(2)700 units 200 units (3)(4) None of these SPACE FOR ROUGH WORK

								4
A				5				2
14.	Gan	tt chart is use	ed for :					
	(1)	inventory c	ontrol	(2)	mater	ial handlin	g	
	(3)	production	schedule	(4)	m/c i	repair scheo	lule	
15.	Cor	sider the di	fferential equ	ation $\frac{dy}{dt} =$	-2t+y	, with y(0)) = 3. Ta	ke h = 0.1, using
	Eule	er's method y	(0.2) is approxi	mately equa	l to :			
	(1)	3.610	(2) 3.53	10	(3)	3.410	(4)	None of these
16.	Two incli incli	metallic bloo ned plane sta ned plane, th	cks having mas rting initially fi ey will have th	sses in the r com rest pos eir kinetic e	atio 2 : ition. W nergies	3 are made Then these h in the ratio	e to slide blocks reac	down a frictionless h the bottom of the
	(1)	2:3	(2) 3:5	5	(3)	3:2	(4)	7:4
17	For	which of the	following situa	tions zerot	law of	thermody	namice wil	1 not be valid ?
17.	Fo r	which of the 50 cc of wat	following situa	tions, zeroth	n law of	thermodyr	namics wil	l not be valid ?
17.	For (1)	which of the 50 cc of wat	following situa ter at 25° C is 1 ilk at 15° C is 1	tions, zeroth nixed with	n law of 150 cc c	thermodyr of water at 2 f water at 1	namics wil 25° C. 15° C	l not be valid ?
17.	For (1) (2) (3)	which of the : 50 cc of wat 500 cc of mi 5 kg of wet	following situa ter at 25° C is 1 ilk at 15° C is 1 steam at 100° (tions, zeroth nixed with nixed with 7 5 is mixed y	n law of 150 cc c 100 cc o vith 50 1	thermodyr of water at 2 f water at 1 kg of dry at	namics wil 25° C. 15° C. nd saturat	l not be valid ? ed steam at 100° C
17.	For (1) (2) (3) (4)	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r	tions, zeroth nixed with nixed with is mixed v nixed with	n law of 150 cc c 100 cc o vith 50 1 10 cc of	thermodyr of water at 2 f water at 1 kg of dry at sulphuric a	namics wil 25° C. 15° C. nd saturat acid at 20°	l not be valid ? ed steam at 100° C C.
17. 18.	For (1) (2) (3) (4) A pa at th	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat article is of we time $t=2$ s	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r ght 8 kg. When ec would be _	tions, zeroth nixed with C is mixed v nixed with nixed with h it is allowe	a law of 150 cc c 100 cc o vith 50 1 10 cc of d to fall g sec.	thermodyr of water at 2 f water at 1 kg of dry a sulphuric a under the f	namics wil 25° C. 15° C. nd saturat acid at 20° force of gra	l not be valid ? ed steam at 100° C C. wity its momentum
17.	For (1) (2) (3) (4) A pa at th (1)	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat article is of we he time $t=2$ s 2	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r right 8 kg. When sec would be (2) 8	tions, zeroth nixed with inixed with is mixed w nixed with nixed with hit is allowe	a law of 150 cc o 100 cc o vith 50 2 10 cc of d to fall g sec. (3)	thermodyr of water at 2 f water at 2 kg of dry as sulphuric a under the f	namics wil 25° C. 15° C. nd saturat acid at 20° force of gra	l not be valid ? ed steam at 100° C. C. wity its momentum 32
17. 18. 	For ·(1) (2) (3) (4) A pa at th (1) The	which of the 50 cc of wat 500 cc of mit 5 kg of wet 10 cc of wat article is of we time t = 2 s 2 function of th	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r eight 8 kg. When ec would be (2) 8	tions, zeroth nixed with ixed with is mixed v nixed with n it is allowe k	a law of 150 cc c 100 cc o vith 50 1 10 cc of d to fall g sec. (3)	thermodyr of water at 2 f water at 2 kg of dry at sulphuric a under the f	namics wil 25° C. 15° C. nd saturat acid at 20° force of gra (4)	l not be valid ? ed steam at 100° C. c. wity its momentum 32
17. 18. 19.	For ·(1) (2) (3) (4) A pa at th (1) The (1)	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat article is of we time $t=2$ s 2 function of th fill up the a	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r eight 8 kg. When ec would be	tions, zeroth nixed with ixed with is mixed v nixed with n it is allowe k k	a law of 150 cc o 100 cc o vith 50 1 10 cc of d to fall g sec. (3) provi	thermodyr of water at 2 f water at 2 kg of dry at sulphuric a under the f 16 de bearing	namics wil 25° C. 15° C. nd saturat acid at 20° force of gra (4) area	l not be valid ? ed steam at 100° C C. wity its momentum 32
17. 18. 19.	For ·(1) (2) (3) (4) A pa at th (1) The (1) (3)	which of the 50 cc of way 500 cc of mi 5 kg of wet 10 cc of way article is of we time $t=2$ s 2 function of th fill up the a provide cus	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r eight 8 kg. When tec would be	tions, zeroth nixed with 1 I is mixed v nixed with 1 n it is allowe 	a law of 150 cc o 100 cc o vith 50 1 10 cc of d to fall g sec. (3) provia absor	thermodyr of water at 2 f water at 2 kg of dry as sulphuric a under the f 16 de bearing b shocks ar	namics wil 25° C. 15° C. nd saturat acid at 20° force of gra (4) area area ad vibratio	l not be valid ? ed steam at 100° C. C. wity its momentum 32
17. 18. 19. 20.	For (1) (2) (3) (4) A pa at th (1) The (1) (3) Que	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat article is of we time t=2 s 2 function of th fill up the a provide cus	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r eight 8 kg. When ec would be	tions, zeroth nixed with is mixed with is mixed with nixed with nit is allowe k (2) (4) th :	a law of 150 cc o 100 cc o vith 50 1 10 cc of d to fall g sec. (3) provi absor	thermodyr of water at 2 f water at 2 kg of dry at sulphuric a under the f 16 de bearing b shocks ar	namics wil 25° C. 15° C. nd saturat acid at 20° force of gra (4) area area ad vibratio	l not be valid ? ed steam at 100° C C. wity its momentum 32
17. 18. 19.	For (1) (2) (3) (4) A pa at th (1) The (1) (3) Que (1)	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat article is of we time t=2 s 2 function of th fill up the a provide cus uing theory is inventory	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r eight 8 kg. When ec would be	tions, zeroth nixed with f nixed with f is mixed v nixed with f nixed	a law of 150 cc o 100 cc o vith 50 1 10 cc of d to fall g sec. (3) provia absor	thermodyr of water at 2 f water at 2 kg of dry a sulphuric a under the f 16 de bearing b shocks ar	namics wil 25° C. 15° C. nd saturat acid at 20° force of gra (4) area ad vibratio	l not be valid ? ed steam at 100° C C. wity its momentum 32
17. 18. 19. 20.	For ·(1) (2) (3) (4) A pa at th (1) (1) (3) Que (1) (3)	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat article is of we time t=2 s 2 function of th fill up the a provide cus uing theory is inventory waiting tim	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r eight 8 kg. When ec would be	tions, zeroth nixed with is mixed with is mixed with nixed with nit is allowe (2) (4) th : (2) (4)	a law of 150 cc o 100 cc o vith 50 1 10 cc of d to fall g sec. (3) provia absor sales produ	thermodyr of water at 2 f water at 2 kg of dry at sulphuric a under the f 16 de bearing b shocks ar	namics wil 25° C. 15° C. Id saturat acid at 20° force of gra (4) area area ad vibratio	l not be valid ? ed steam at 100° C C. wity its momentum 32
17. 18. 19. 20. 21.	For ·(1) (2) (3) (4) A pa at th (1) The (1) (3) Que (1) (3) In a yarc	which of the 50 cc of wat 500 cc of mi 5 kg of wet 10 cc of wat article is of we time t=2 s 2 function of th fill up the a provide cus uing theory is inventory waiting tim weaving oper is of material	following situa ter at 25° C is r ilk at 15° C is r steam at 100° C ter at 20° C is r eight 8 kg. When ec would be	tions, zeroth nixed with is mixed with is mixed with nixed with nit is allowe (2) (4) th : (2) (4) th : (2) (4)	a law of 150 cc o 100 cc o vith 50 1 10 cc of d to fall g sec. (3) provia absor sales produ controll for this	thermodyr of water at 2 f water at 2 kg of dry at sulphuric a under the f 16 de bearing b shocks ar action time ed is the nu s task is :	namics wil 25° C. 15° C. Ind saturat acid at 20° force of gra (4) area ad vibratio	l not be valid ? ed steam at 100° C C. wity its momentum 32 n

RO	3						6						
22.	In a	single	slide	er cran	ık cha	in :							
	(1)	each	of th	e four	pairs	are a turnin	ng pa	ir					
	(2)	one	is tur	ning p	air ar	nd three are	slidin	g pair	s				
	(3)	two	are ti	irning	pairs	and two ar	e slid:	ing pa	irs				
	(4)	three	e are f	turnin	g pair	s and one is	a she	ding p	aır				
23.	A cr	ritical	activi	ity has	5	slaci	k.						
	(1)	max	imun	l	(2)	minimum			(3)	zero	i		(4) average
24.	Mat	ch the	follo	wing	:								
	(a)	Ρ(φ)	,φis	the e	mpty	set	(i)	1 – P	'(A)				
	(b)	P(A,	/B).	P(B)			(ii)	P(A	∩B)				
	(c)	P (Ā	.)				(iii)	1-P($(\mathbf{A} \cup \mathbf{E})$	3)			
	(d)	$P(\overline{A}$	$\cap \overline{B}$				(iv)	0					•
	(e)	P(A	∪B)				(v)	P(A)	+ P((B) — [P(A∩	B)	
		(a)	(b)	(c)	(d)	(e)							
	(1)	(iv)	(ii)	(i)	(iii)	(v)							
	(2)	(iii)	(ii)	(i)	(iv)	(v)							
	(3)	(ii)	(ii)	(ii)	(iv)	(v)							
	(4)	(i)	(ii)	(iii)	(iv)	(v)							
25.	A pi the l	ressur oulk n	e of 5 nodul	00 kPa us in l	a appl MPa is	ied to a 2 m	³ if th	e liqui	d res	ults in	i a voli	ume (change of 0.004
	(1)	2.5			(2)	25		(3)	250			(4)	2500
26.	A m	ass m eased	i attao by 2 I	ched t kg, the	o a li perio	ght spring c	 by 1 s	tes wi	th a j l. The	period e valu	l of 2 e of m	secor	nds. If the mas
	(1)	1 kg	5		(2)	1.6 kg	5	(3)	2 kg			(4)	2.4 kg
27.	Air	enters	a con	unter	flow l	neat exchang	ger at	70°C	and l	eaves	at 40°	C. W	ater enters at 3
	and	icave:	s at Ol	U C. I.	110 1.0	gariumuu M	eait 1	emper (a)	10 5		rence	(LIVI)	

								1710
A				,	7			ount
28	In ti	he ahove evamr	le the i	heat concrated c	lua to f	riction is	147	
20.	(1)	2146	(2)	2248	(3)	2356	(4)	2474
 29.	The	cutting tool in a	a millin	g machine is mo	ounted	on :		
	(1)	spindle	(2)	arbor		(3) column		(4) knee
30.	It is of m rang	desired to punc nild steel is 30 kg ge of :	h a hol g/mm ²	e of 20 mm dian , the force neces	neter in sary for	a plate of 20 m punching woul	n thick d be ap	. If the shear stress proximately in the
	(1)	15-20 tonnes	(2)	20-25 tonnes	(3)	25-35 tonnes	(4)	35-40 tonnes
31.	The	value of $\begin{bmatrix} \lim_{x \to \infty} \end{bmatrix}$	$\left(\frac{1}{\sin x}\right)$	$\left[-\frac{1}{\tan x}\right]$ is :				
	(1)	0	(2)	1 (3)	2	(4)	8	
32.	The	value of $\frac{C_p}{C_v}$ fo	r air is	:				
	(1)	1	(2)	1.4	(3)	1.8	(4)	2.3
	A sł	naft subjected to al to 30 N/mm ²	o maxin 2 at a p aximun	num bending str articular sectior n shear stress th	ress of n. If the leory of	80 N/mm ² and e yield point in f failure is used,	maxim tensior , then (um shearing stress of the material is the factor of safety
33.	280 obta	ined will be :				3.0	(4)	3.5
33.	280 obta (1)	ined will be : 2.5	(2)	2.8	(3)	0.0	(-)	
33. 	280 obta (1) A p acce	article is perfor	(2) rming s	2.8 5HM. If its may he frequency of	(3) cimum motior	velocity is 1.5 p	m/sec	and its maximum Hz.
33. 34.	280 obta (1) A p acce (1)	<pre>ined will be : 2.5 article is perfor leration is 12 m 16/π</pre>	(2) rming 5 1/sec ² t (2)	2.8 SHM. If its may he frequency of $4/\pi$	(3) cimum motior (3)	velocity is 1.5 p would be 2/π	(1) m/sec (4)	and its maximum Hz. 1/π
33. 34. 35.	280 obta (1) A p acce (1) A P expe	article is perfor leration is 12 m $16/\pi$ ERT activity ha ected time is 7 d	(2) rming f /sec ² t (2) s an op ays. Th	2.8 SHM. If its may he frequency of $4/\pi$ ptimistic time of the most likely time	(3) cimum motior (3) three of	velocity is 1.5 m would be $2/\pi$ days, pessimistic e activity is :	(1) m/sec (4) c time of	and its maximum Hz. 1/π of 15 days and the

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RO	3						8		OUI
26	Mati	ch Iie	+ T wi	th I is	+ 17 ·				
50.	Ivian		List	I LIS				List II	
	(a)	Alur	niniu	r m bra	ke sho	De	(i)	Deep drawing	
	(<u>-</u>) (b)	Plast	ic wa	ter bo	ottle		(ii)	Blow moulding	
	(c)	Stain	less s	teel ci	ups		(iii)	Sand casting	
	(e) (d)	Alur	niniu	m can	r -		(iv)	Centrifugal casting	
	~ /						(v)	Impact extrusion	
							(vi)	Upset forging	
		(a)	(b)	(c)	(d)				
	(1)	(i)	(ii)	(iii)	(i v)				
	(2)	(iv)	(iii)	(ii)	(i)				
	(3)	(iii)	(ii)	(v)	(i)				
	(4)	(iii)	(vi)	(v)	(iv)				
57.	A si	ngle p	oint t	ool ha	IS :				
	(1)	rake	angle	2	(2)	cutting a	angle	(3) lip angle	(4) All of these
	Whi	.ch of 1	the fo	llowir	ng is t	he correct	statem	ent ?	
	(1)	A sta	ationa	iry po	int on	the grap	h is any	point at which $\frac{dy}{dx} = 0$.	
	(2)	A sta	ationa	iry po	int on	the grapl	h is any	point at which $\frac{dy}{dx} = \infty$.	
	(3)	A sta	ationa	iry po	int on	the graph	n is any	point at which there are g	aps or breaks.
	(4)	Non	e of tl	nese					
			speci	ified b	y its :				
39.	A sc	16 . 19					(2)	minor dispessor and with	h
39.	A so (1)	majo	r dia	meter	and p	pitch	(2)	numor diameter and pitc	

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StudentBounty.com 9 Α Match List 1 with List 2: 40. List 1 List 2 Helical gear (a) Non-interchangeable (i) Herring bones gear Zero axial thrust (b) (ii) (c) Worm gears Quiet motion (iii) Hypoid gears High speed reduction (d) (iv) (a) (b) (d) (c) (1)(i) (ii) (iii) (iv) (2) (iii) (ii) (iv) (i) (3) (iii) (i) (iv) (ii) (4) (iii) (ii) (iv) (i)

41.	The rank of the matrix	0 4 2	1 2 0 2 1 3	-2 5 1] is :				
	(1) 4	(2)	3			(3)	2	(4)	1

42. The process of improving the cutting action of the grinding wheel is called :

•	(1)	truing	(2)	dressing		(3)	facing	_	(4) (learing
43.	If A	$= \begin{bmatrix} \alpha & 2 \\ 2 & \alpha \end{bmatrix}, A $	$ ^{3} =125$, the	en α is :	-			_		
	(1)	7	(2)	5	(3)	3		(4)	None	of these
	The	order of erro	or in the Si	mpson's rule	for nume	rical i	ntegration wi	ith a	step siz	e h is :
	(1)	h	(2)	h ⁵	(3)	h ³		(4)	h ⁴	
45.	A be spri	ody weighing ng will be _	g 500 kg fa	lls 8 cm and a	strikes a 5	500 kg	g/cm spring.	The	deforma	ntion of the
	(1)	8	(2)	2	(3)	20		(4)	4	
-										

SPACE FOR ROUGH WORK

RO3
 10

 46. The ratio of the ultimate stress to the design stress is known as:

 (a) clastic limit
 (a) strain
 (a) factor of safety
 (b) bulk modulus

 47. A bicycle remains stable in running through a bend because of:

 (a) Coroloids action
 (b) Roftus of curved path
 (c) Coroloid action
 (c) Roftus of curved path
 (c) Coroloid action
 (c) volume
 (c) temperature
 (d) All of these

 49. When a gas is heated, change takes place in:

 (1) pressure
 (2) volume
 (3) temperature
 (4) All of these

 49. If the particles of a fluid attain such velocities that vary from point to point in magnitude and direction as well as from instant, the flow is:

 (1) Uniform
 (2) Steady
 (3) Turbulent
 (4) Laminar

 50. Resistance spot welding is performed on two plates of 1.5 mm thickness with 6 mm diameter electrode, using 15000 A current for a time duration 00.25 sec. Assuming the interface resistance to be 0.0001 ohn, the heat generated to form the weld is:

 (1) 5625 W-sec
 (2) 8437 W-sec
 (3) 22500 W-sec
 (4) 33750 W-sec

 51. Inverse Laplace of
$$f(e) = \frac{s + 2^3}{(s + 4) (s^2 + 9)}$$
 is:

 (a) $2c^2 - c^{-2^2} + 5c^{-3^2}$

~

										5
A							11			A
53.	A m dam	ass o ping	f 1 kg co-effi	g is at icient	tache of thi	d to the end o s system will !	of a sprin be	ng with sti Ns/n	ffness 0.7 1 n.	N/mm. The critical
	(1)	1.40			(2)	18.522	(3)	52.92	(4)	529.2
54.	A lo that	t has î exacti	10% đ ly 2 ol	efectiv f the c	ve iter hosen	ns. Ten items items are def	are chose ective is :	en randomly	y from this	lot. The probability
	(1)	0.00	36		(2)	0.1937	(3)	0.2234	(4)	0.3874
55.	A re sink (1)	verse is 260 2.33	d Car) K an	not cy d the	rcle re tempo (2)	emoves 40,000 erature of the 3.33	W from heat rese (3)	a heat sinl rvoir is 320 4.33	<. The temp K. The CO (4)	perature of the heat P of the engine is : 5.33
	Mate		follo	wing				priate mact		
	14161	Con	pone	nt	comp		ne appro		Process	
	(a)	Squa	re ho	le in a	ı high	strength alloy	7	(i)	Milling	
				lo in /	a cera	mic componer	n t	(ii)	Drilling	
	(b)	Squa	are ho	пеша	•-	Pointe		(11)	0	
	(b) (c)	Squa Bline	are ho d hole	es in a	die			(iii)	ECM	1. 1 . 1
	(b) (c) (d)	Squa Bline Turb	are ho d hole vine b	es in a lade p	die rofile	on a high stre	ength allo	(ii) (iii) 9y (iv)	ECM Jig boring	
	(b) (c) (d)	Squa Blino Turt	are ho d hole pine bi	s in a lade p	die rofile	on a high stre	ength allo	(ii) (iii) y (iv) (v)	ECM Jig boring EDM	
	(b) (c) (d)	Squa Bline Turb	are ho d hole pine b	es in a lade p	die rofile	on a high stre	ength allo	(ii) (iii) (v) (v) (vi)	ECM Jig boring EDM USM	
	(b) (c) (d)	Squa Bline Turk (a)	are ho d hole vine b (b)	s in a lade p	die rofile (d)	on a high stre	ength allo	(ii) (iii) (v) (v) (vi)	ECM Jig boring EDM USM	5
	(b) (c) (d)	Squa Bline Turt (a) (iii)	are ho d hole bine b (b) (iv)	ie in a is in a lade p (c) (v)	die rofile (d) (vi)	on a high stre	ength allo	(ii) (iii) (v) (v) (vi)	ECM Jig boring EDM USM	3
	 (b) (c) (d) (1) (2) 	Squa Bline Turb (a) (iii) (v)	are ho d hole pine b (b) (iv) (vi)	(c) (v) (iv)	die rofile (d) (vi) (iii)	on a high stre	ength allo	(ii) (iii) (v) (v) (vi)	ECM Jig boring EDM USM	3
	 (b) (c) (d) (1) (2) (3) 	Squa Bline Turk (a) (iii) (v) (i)	are ho d hole pine b (b) (iv) (vi) (ii)	(c) (v) (v) (v) (v)	die rofile (d) (vi) (iii) (vi)	on a high stre	ength allo	(ii) (iii) (v) (v) (vi)	ECM Jig boring EDM USM	3
	 (b) (c) (d) (1) (2) (3) (4) 	Squa Bline Turt (a) (iii) (v) (i) (iv)	re ho d hole oine b (b) (iv) (vi) (ii) (iii)	(c) (v) (iv) (v) (iv) (ii)	die rofile (d) (vi) (iii) (vi) (vi)	on a high stre	ength allo	(ii) (iii) (v) (v) (vi)	ECM Jig boring EDM USM	<u>-</u>
 57.	 (b) (c) (d) (1) (2) (3) (4) In an are : 	Squa Bline Turk (a) (iii) (v) (i) (iv) n idea	(b) (iv) (iv) (ii) (iii) (iii)	(c) (v) (iv) (iv) (ii) turbin	die rofile (d) (vi) (vi) (vi) (vi) ne pla	on a high stre nt, it is assum	ength allo	(iii) by (iv) (v) (vi) the compre	ECM Jig boring EDM USM	s expansion processes

SPACE FOR ROUGH WORK

											4
RO3					12	•					
58.	A nu of a at ru Ass	umber of cold plate from 50 oll work inter uming no fron	rolling pa mm to 2 face is 0. t and bac	isses a 5 mm 1. It i k tens	re required The roll di s required sion, the mi	in a tr iamete that f nimu	wo hig er is 70 the dra m num	h rolling n 10 mm and 16 in each 16 of pas	nill to r l the co n pass ses rec	educe pefficie must quired	the thickness ent of friction be the same. will be :
	(1)	3	(2)	4		(3)	5		(4)	7	
59.	The circl	difference bet le is called :	tween the	e tootl	n space and	the	tooth 1	thickness a	as mea	sured	on the pitch
	(1)	working dep	oth	(2)	clearance		(3)	face wid	th	(4)	backlash
60.	Dur add	ing air conditi ed is 50 kcal/s	oning of a sec, then	a spac the se	e the sensib nsible heat	le hea factor	t adde is :	ed is 100 kc	al/sec	and th	he latent heat
	(1)	0.25	(2)	0.33		(3)	0.50		(4)	0.67	
61.	A m spee	uilling cutter h ed in mm per r	aving 8 t ninute is	eeth i	s rotating a	t 150	rpm. I	f the feed	per to	oth is	0.1, the table
	(1)	120	(2)	187		(3)	125		(4)	70	
					·						
62.	Mar	k the false sta	itement :								
62.	Mar (1)	k the false standard for the false standard for the formula $If f(z)$ is bound by the formula $f(z) = f(z) + f(z)$.	itement : nded for	all z i	n the entire	com	olex pl	ane, then j	(z) is a	a consi	lant.
62.	Mar (1) (2)	k the false stating $If f(z)$ is bound of $f(z)$ is analogous of the function of the functi	itement : nded for lytic insic	all z i le a ci	n the entire rcle having	com its ce	olex pl	ane, then $j = a$, then	$f(z)$ is a $\int f'(a)$	a consi is bo:	tant. unded.
62.	Mar (1) (2) (3)	k the false stand If $f(z)$ is bou If $f(z)$ is analogous for the standard	itement : nded for lytic insic iarmonic	all z i le a ci in D,	n the entire rcle having then it has	com its ce partia	olex pl ntre at 1 deriv	ane, then j z = a, ther vatives of a	$f(z)$ is a $h \mid f'(a)$ all order	a const is bo ers.	lant. unded.
62.	Mar (1) (2) (3) (4)	k the false sta If $f(z)$ is bou If $f(z)$ is anal If $u(x, y)$ is h If $f(z)$ is anal of $f(z)$ on C.	ntement : nded for lytic insic narmonic ytic insid	all z i le a ci in D, e the c	n the entire rcle having then it has circle C hav	comp its ce partia ing its	olex pl. ntre at 1 deriv 5 centre	ane, then $j = z = a$, then j vatives of a e at $z = a$, t	f(z) is a $ f'(a) $ all order then $f(z)$	a consi is bo ers. 1) is the	tant. unded. e mean value
62. 63.	Mar (1) (2) (3) (4) The	k the false sta If $f(z)$ is bou If $f(z)$ is anal If $u(x, y)$ is h If $f(z)$ is anal of $f(z)$ on C. atomic mass of	ntement : nded for lytic insic narmonic ytic insid	all z i le a ci in D, e the c is :	n the entire rcle having then it has circle C hav	comp its ce partia ing its	blex pl. ntre at l deriv centre	ane, then $j = z = a$, then j vatives of a e at $z = a$, t	f(z) is a $f'(a)$ all order then $f(a)$	a const is bo ers. 1) is the	tant. unded. e mean value
62. 63.	Mar (1) (2) (3) (4) The (1)	k the false sta If $f(z)$ is bou If $f(z)$ is anal If $u(x, y)$ is h If $f(z)$ is anal of $f(z)$ on C. atomic mass of 12	ntement : nded for lytic insic narmonic ytic insid of oxygen (2)	all z is le a ci in D, e the c is : 14	n the entire rcle having then it has circle C hav	comp its ce partia ing its (3)	blex plantre at 1 deriv 5 centre 16	ane, then $j = z = a$, then j vatives of a e at $z = a$, t	f(z) is a n f'(a) all orde hen f(a (4)	a const is bo ers. a) is the 32	tant. unded. e mean value
62. 63.	Mar (1) (2) (3) (4) The (1) In v	k the false sta If $f(z)$ is bou If $f(z)$ is anal If $u(x, y)$ is h If $f(z)$ is anal of $f(z)$ on C. atomic mass of 12 alue engineerit	ntement : nded for lytic insic narmonic ytic insid of oxygen (2) ng, the te	all z is le a ci in D, e the c is : 14 crm va	n the entire rcle having then it has circle C hav	comp its ce partia ing its (3)	blex pl. ntre at l deriv centre 16	ane, then $j = z = a$, then j ratives of a e at $z = a$, the second	f(z) is a a f'(a) all orde hen f(a (4)	a const is bo ers. 1) is the 32	tant. unded. e mean value
62. 63.	Mar (1) (2) (3) (4) The (1) In v (1)	k the false sta If $f(z)$ is bou If $f(z)$ is anal If $u(x, y)$ is h If $f(z)$ is anal of $f(z)$ on C. atomic mass of 12 alue engineering manufacturing	ntement : nded for lytic insid armonic ytic insid of oxygen (2) ng, the te ng cost o	all z is le a ci in D, e the c is : 14 erm va f the j	n the entire rcle having then it has circle C hav	(3)	blex pl. ntre at 1 deriv 5 centre 16	ane, then $j = z = a$, then j vatives of a e at $z = a$, t	f(z) is a f'(a) all orde hen f(z (4)	a const is bo ers. 1) is the 32	tant. unded. e mean value
62. 63. 64.	Mar (1) (2) (3) (4) The (1) In v (1) (2)	k the false sta If $f(z)$ is bou If $f(z)$ is anal If $u(x, y)$ is h If $f(z)$ is anal of $f(z)$ on C. atomic mass of 12 alue engineering manufacturing selling price	ntement : nded for lytic insid armonic ytic insid of oxygen (2) ng, the te ng cost o of the pr	all z is le a ci in D, e the c is : 14 erm va f the p oduct	n the entire rcle having then it has circle C hav	(3)	blex pl. ntre at l deriv centre 16	ane, then $j = z = a$, then j vatives of a e at $z = a$, t	f(z) is a f(a) order f(a) f(a) f(a) f(a) f(a) f(a) f(a) f(a)	a const is bo ers. 1) is the 32	tant. unded <i>.</i> e mean value
62. 63. 64.	Mar (1) (2) (3) (4) The (1) (1) (2) (3)	k the false sta If $f(z)$ is bou If $f(z)$ is anal If $u(x, y)$ is F If $f(z)$ is anal of $f(z)$ on C. atomic mass of 12 alue engineeri manufacturii selling price total cost of	nded for lytic insid harmonic ytic insid of oxygen (2) ng, the te ng cost o of the pr the produ	all z is le a ci in D, e the c is : 14 rrm va f the j oduct 1ct	n the entire rcle having then it has circle C hav	(3)	blex pl. ntre at l deriv centre 16	ane, then j z = a, then vatives of a e at $z = a$, t	f(z) is a $ f'(a) $ all order then $f(a)$ (4)	a const is bo ers. 1) is the 32	tant. unded. e mean value

A					13				.00
65.	Reyr	old's number is	the ra	tio of ine	rtia force	e to :			
	(1)	pressure force			(2)	elas	tic force		
	(3)	gravity force			(4)	visc	ous force		
66.	The 2 vit	maximum veloc prations/sec is ec	ity of qual to	a body ir	n SHM 1 m/s	with a sec.	amplitude o	f 150 mm a	and a frequency of
	(1)	0.01885	(2)	0.1885		(3)	1.885	(4)	18.55
67.	A ba strik of th	ll A of mass 0.23 es an identical sta e ball B just after	5 kg n ationa the in	noving on ry ball B c mpact wil	a smoo on the ta l be :	oth ho ble. If	rizontal tabl the impact i	e with a vo s perfectly	elocity of 10 m/sec plastic, the velocity
	(1)	5 m/sec	(2)	10 m/se	ec	(3)	zero	(4)	2.5 m/sec
	wate at th	r (C=4180 J/kg ie rate of 5.25 kg	°C) flo 2/s. If	ows at a ra the heat	ate of 2] transfe	kg/s v r suri	while the exl face area is	haust gas (1 32.5 m² ar	1030 J/kg °C) flows id the overall heat
	wate at th trans (1)	r (C=4180 J/kg le rate of 5.25 kg ler coefficient is 1.2	°C) flc g/s. If 200 V (2)	ows at a ra the heat V/m ² °C, 2.4	ate of 2 l transfe what is	kg/s r surf the N (3)	while the exl face area is TU for the l 4.5	haust gas (1 32.5 m ² ar heat exchar (4)	1030 J/kg °C) flows ad the overall heat ager ? 8.6
69.	wate at th trans (1) Air a trans	r (C = 4180 J/kg le rate of 5.25 kg sfer coefficient is 1.2 at 20° C blows ov sfer coefficient is	°C) flc g/s. If 200 W (2) ver a p 25 W	ows at a ra the heat V/m ² °C, 2.4 Plate of 50 7/m ² °C, t	ate of 2 1 transfe what is cm×75 he heat	kg/s r surf the N (3) cm n transf	while the exi face area is TU for the l 4.5 naintained a fer rate is	haust gas (1 32.5 m ² ar heat exchar (4) t 250°C. If t	1030 J/kg °C) flows ad the overall heat ager ? 8.6 the convection heat
69.	wate at th trans (1) Air a trans (1)	r (C = 4180 J/kg ie rate of 5.25 kg ifer coefficient is 1.2 at 20° C blows ov ifer coefficient is 215.6	°C) flc g/s. If 200 W (2) ver a p 25 W (2)	ows at a ra the heat V/m ² °C, 2.4 date of 50 /m ² °C, t 2156	ate of 2 l transfe what is cm×75 he heat	kg/s v r surf the N (3) cm n transf (3)	while the exi face area is TU for the 1 4.5 naintained a fer rate is 2.156	haust gas (1 32.5 m ² ar heat exchar (4) t 250°C. If t k (4)	1030 J/kg °C) flows ad the overall heat ager ? 8.6 the convection heat W. 21.56
69.	wate at th trans (1) Air a trans (1)	r (C = 4180 J/kg le rate of 5.25 kg sfer coefficient is 1.2 at 20° C blows ov sfer coefficient is 215.6	°C) flc g/s. If 200 V (2) ver a p 25 W (2)	ows at a ra the heat 2.4 plate of 50 /m ² °C, t 2156	ate of 2 l transfe what is cm×75 he heat	kg/s v r surf the N (3) cm n transf (3)	while the exi face area is TU for the l 4.5 naintained a fer rate is 2.156	haust gas (1 32.5 m ² ar heat exchar (4) t 250°C. If t k (4)	1030 J/kg °C) flows ad the overall heat ager ? 8.6 the convection heat W. 21.56
69.	wate at th trans (1) Air a trans (1) If	Fr (C = 4180 J/kg the rate of 5.25 kg after coefficient is 1.2 at 20° C blows over after coefficient is 215.6 F = $2xz\hat{i} - x\hat{j}$	°C) flo g/s. If 200 W (2) ver a p 25 W (2) + y^2	ws at a rate the heat $V/m^2 \circ C,$ 2.4 plate of 50 $/m^2 \circ C,$ to 2156 k and	ate of 2 1 transfe what is cm×75 he heat	kg/s v r surf the N (3) cm n transf (3) s th	while the extra face area is TU for the 1 4.5 naintained a fer rate is 2.156 ne region	haust gas (32.5 m ² ar heat exchar (4) t 250°C. If ((4) (4)	1030 J/kg °C) flows ad the overall heat ager ? 8.6 the convection heat W. 21.56 ed by surface
69.	wate at th trans (1) Air a trans (1) If x =	r (C = 4180 J/kg ie rate of 5.25 kg ifer coefficient is 1.2 at 20° C blows ov ifer coefficient is 215.6 $F = 2xz\hat{i} - x\hat{j}$ 0, x = 2, y = 0, y = 0	°C) flo g/s. If 200 W (2) ver a p 25 W (2) + y^2 f = 6, z	bws at a radiation of the heat $V/m^2 \circ C$, 2.4 plate of 50 $/m^2 \circ C$, the second secon	ate of 2 1 transfe what is cm×75 he heat V i 4 then	kg/s v r surf the N (3) cm n transs (3) s th ∭V	while the ext face area is TU for the 1 4.5 	haust gas (1 32.5 m ² ar heat exchar (4) t 250°C. If f (4)	1030 J/kg °C) flows ad the overall heat ager ? 8.6 the convection heat W. 21.56 ed by surface
69.	wate at th trans (1) Air a trans (1) If x = (1)	r (C = 4180 J/kg the rate of 5.25 kg after coefficient is 1.2 at 20° C blows over after coefficient is 215.6 $F = 2xz\hat{i} - x\hat{j}$ $0, x = 2, y = 0, y = 2\hat{i} - 3\hat{j} + 4\hat{k}$	°C) flo g/s. If 200 W (2) ver a p 25 W (2) + y^2 = 6, z	we at a radiation of the heat $V/m^2 \circ C$, 2.4 plate of 50 $/m^2 \circ C$, t 2156 \hat{k} and $= x^2, z =$	ate of 2 1 transfe what is cm×75 he heat V i 4 then (2)	$\frac{\text{kg/s}}{\text{r surf}}$ $\frac{\text{r surf}}{(3)}$ $\frac{\text{cm n}}{(3)}$ $\frac{(3)}{(3)}$ $\frac{\text{s th}}{(3)}$	while the exhibit of the the exhibit of the here is the formula of the here is the second se	haust gas ($\stackrel{(2)}{=}$ 32.5 m ² ar heat exchar (4) t 250°C. If t (4) (4) bounde	1030 J/kg °C) flows ad the overall heat ager ? 8.6 the convection heat W. 21.56 ed by surface
69.	wate at th trans (1) Air a trans (1) If x = (1) (3)	r (C = 4180) / kg the rate of 5.25 kg e rate of 5.25 kg fer coefficient is 1.2 at 20° C blows out fer coefficient is 215.6 $F = 2xz\hat{i} - x\hat{j}$ $0, x = 2, y = 0, y = 2\hat{i} - 3\hat{j} + 4\hat{k}$ $9\hat{i} + 200\hat{j} + 3\hat{j} + 4\hat{k}$	°C) flo g/s. If 200 W (2) ver a p 25 W (2) + y^2 = 6, z 64 k	bws at a rate the heat $V/m^2 \circ C,$ 2.4 plate of 50 $/m^2 \circ C,$ the second	ate of 2 1 transfe what is cm×75 he heat V i 4 then (2) (4)	$\frac{\text{kg/s v}}{\text{r surf}}$ $\frac{\text{r surf}}{(3)}$ $\frac{\text{cm n}}{\text{transf}}$ $\frac{(3)}{(3)}$ $s \text{ th}$ $\frac{\text{s}}{28\hat{i}}$ Nor	while the exhibit of	haust gas ($\stackrel{(2)}{32.5 m^2}$ ar heat exchar (4) t 250°C. If t (4) (4) bounde	1030 J/kg °C) flows ad the overall heat ager ? 8.6 the convection heat W. 21.56
69. 70. 71.	wate at the trans (1) Air a trans (1) If x = (1) (3) A 15 in a The	r (C = 4180)/kg le rate of 5.25 kg sfer coefficient is 1.2 at 20° C blows ov sfer coefficient is 215.6 $F = 2xz\hat{i} - x\hat{j}$ 0, x = 2, y = 0, y = $2\hat{i} - 3\hat{j} + 4\hat{k}$ $9\hat{i} + 200\hat{j} +$ 0 mm diameter s bearing whose le bearing pressure	°C) flo g/s. If 200 W (2) ver a p 25 W (2) + y^2 = 6, z 64 k haft st ength e is	bws at a radiation of the heat $V/m^2 \circ C$, 2.4 plate of 50 $/m^2 \circ C$, to 2156 k and $= x^2, z =$ upporting is 1.5 time	ate of 2 1 transfe what is cm × 75 he heat V i 4 then (2) (4) a load of es the sh N/mm ²	kg/s v r surf the N (3) cm n transf (3) s th \iiint_V 28 \hat{i} Nor of 10 k aft d	while the exhibit of the exhibit of the exhibit of the height of the height of the height of the exhibit of th	haust gas ($\frac{1}{32.5 \text{ m}^2 \text{ ar}}$ heat exchar (4) t 250°C. If ((4) bounde 84 \hat{k} ed of 1500 r e coefficier	1030 J/kg °C) flow and the overall heat ager ? 8.6 the convection heat W. 21.56 ed by surfact rpm. The shaft run at of friction is 0.02

SPACE FOR ROUGH WORK

P.T.O.

RO3	3						14							2
72.	Arri The	val to	a sys	tem is	Poiss	on with me will be	an rai	te of 6	per h	iour, a	nd se	rvice	time of 3 n	172
	(1)	0.3	1.		(2)	0.129		(3)	1.29			(4)	12.9	1
73.	The	specif	ic gra	vity o	f wate	er is taken a								
	(1)	0.00	1	•		(2) 0.01			(3)	0.1			(4) 1	
74.	Mat	ch the	meas	suring	; inst	uments wit	th the	appro	opriate	e appl	icatio	ns :		
		Mea	surin	g inst	rume	nts		Арр	licatio	ons				
	(a)	Taly	surf				(i)	T-slc	ots					
	(b)	Tele	scopic	: gaug	e		(ii)	Flatr	ness					
	(c)	Trar	nsfer c	aliper	ร่		(iii)	Inter	mal di	iamete	r			
	(d)	Auto	ocollir	nator			(iv)	Roug	ghness	5				
		(a)	(b)	(c)	(d)									
	(1)	(i)	(ii)	(iii)	(iv)									
	(2)	(iv)	(iii)	(i)	(ii)									
	(3)	(iv)	(iii)	(ii)	(i)									
	(4)	(iii)	(iv)	(i)	(ii)									
75.	A 75 of o	50 hou peratio	ers life on and	test is d all o	s perf ther s	ormed on te urvive the t	en com est, th	nponer ien the	nts. If e failu	one co re per	mpor hour	nent f is :	ails after 35	0 hours
	(1)	0.00	0141		(2)	0.000133		(3)	0.001	141		(4)	0.00133	
76.	Inte is :	grals f	`(x, y)	=x/y	over t	he region bo	ounde	d by y	<i>x = x, y</i>	=2x, x	:=1, >	c=2i	n the first q	uadrant
	(1)	3 In	2		(2)	3	(3)	$\frac{3}{2}$ ln	2		(4)	Nor	ne of these	
77.	A fr the	amed numb	struct er of j	ure is oints.	impe	rfect, if the i	numbe	er of n	nembe	ers are			_ (2j – 3), wi	here j is
	(1)	equa	al to		(2)	less than		(3)	great	ter tha	ın	(4)	either (2)	or (3)

								SE
								'dente
A					15			04
78.	The equa	Euler load fo al to :	r a colum	n is 1000 kN a	nd crus	hing load is 15	500 kn. 1	he Rankine loa
	(1)	600 LNI	(2)	1000 kN	(3)	1500 kN	(4)	2500 kN
	(1)	000 KIN	(4)	1000 144				
 79.	(1) An i ener	insulated 2 kg	box falls after it ha	from a balloon as hit the earth	3.5 km a s surfac	above the earth	n. The cha	ange in the intern
 79.	(1) An i ener (1)	insulated 2 kg rgy of the box zero	box falls after it ha	from a balloon as hit the earth 70,000 kJ	3.5 km a 's surfac (3)	above the earth re will be : 68.6 kJ	n. The cha (4)	ange in the inter
79. 80.	(1) An i ener (1) The belt	insulated 2 kg rgy of the box zero difference bet speed is 15 m	(2) box falls after it ha (2) ween tens /sec, the	from a balloon as hit the earth 70,000 kJ sions on the tig transmitted po	3.5 km a surfac (3) th and s wer in k	above the earth e will be : 68.6 kJ lack sides of th W is :	n. The cha (4) ne belt dr	ange in the inter 7 kJ ive is 3000 N. If t

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RO3

सूचना — (पृष्ठ 1 वरून पुढे....)

- StudentBounty.com (8) प्रश्नपुस्तिकेमध्ये विहित केलेल्या विशिष्ट जागीच कच्चे काम (रफ वर्क) करावे. प्रश्नपुस्तिकेव्यतिरिक्त उत्तरपत्रिकेवर वा इतर कागदावर कच्चे काम केल्यास ते कॉपी करण्याच्या उद्देशाने केले आहे, असे मानले जाईल व त्यानुसार उमेदवारावर शासनाने जारी केलेल्या ''परीक्षांमध्ये होणान्या गैरप्रकारांना प्रतिबंध करण्याबाबतचे अधिनियम-82'' यातील तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.
- (9) सदर प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपल्यानंतर उमेदवाराला ही प्रश्नपुस्तिका स्वत:बरोबर परीक्षाकक्षाबाहेर घेऊन जाण्यास परवानगी आहे. मात्र परीक्षा कक्षाबाहेर जाण्यापूर्वी उमेदवाराने आपल्या उत्तरपत्रिकेचा भाग-1 समवेक्षकाकडे न विसरता परत करणे आवश्यक आहे.

नमुना प्रश्न

Pick out the correct word to fill in the blank :

Q. No. 201. I congratulate you ______ your grand success.

(1)for (2) at (3)(4) about on ह्या प्रश्नाचे योग्य उत्तर ''(3) on'' असे आहे. त्यामुळे या प्रश्नाचे उत्तर ''(3)'' होईल. यास्तव खालीलप्रमाणे

- प्रश्न क्र. 201 समोरील उत्तर-क्रमांक ''(3)'' हे वर्तुळ पूर्णपणे छायांकित करून दाखविणे आवश्यक आहे.
- ① ② प्र. क्र. 201.) (4)

अशा पद्धतीने प्रस्तुत प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाचा तुमचा उत्तरक्रमांक हा तुम्हाला स्वतंत्ररीत्या पुरविलेल्या उत्तरपत्रिकेवरील त्या त्या प्रश्नक्रमांकासमोरील संबंधित वर्तुळ पूर्णपणे छायांकित करून दाखवावा. ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.

कच्च्या कामासाठी जागा /SPACE FOR ROUGH WORK