Sir Syed University of Engineering & Technology ANSWER SCRIPT

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Ques	Abdul Moiz Chishti BSE-209-022.
No. 1	here Gouss low requires only net electric that
is	zero, because their may be a charge on the
Sufac	ncie, Gauss's law requires only net electric flux (zero, because there may be a charge on the e which contributes no electric field.
0	
ges, he	ie, electric flux must be zero the convere is 7
therefo	re no net charge contains inside the surface.
Aucs	I (b):
1	
Lewi	h law of Thermodynamics:
111L X	ereth law of their objection is one of themost
State	enent:
	brium with a third System C, Separately then on A and B will also be in thermal quite the each other.
equibi	brium with a third System C, Separately then
Syste	n A and B will also be in thermal quite
10	the each other
	System System
	L'A L B
	101
	Joseph
Exampl	k:- When we have two glasses of water, One glass

will have bot water and other will contain cold. Now

No leave them in the table for tew hours they will

Note them in the table for tew hours they will

A contain themas equilibrium with the temporation of

Year.

Ours: 2 1 (C):
Dutik:

A material that can be easy bent or material

can be obtain into wires. Such material will undergo

plastic deformation before fracture. Under toxik steers,

perential elongation before fracture is higher in their materials.

Under texik bead, they can about more enough before

fracture. Metal forming approximants, like yelling obtaining on

bending can be made on such materials.

Brittle:

Consewation of mass and conservation of Energy states that mass and energy can neither be treated not be distroyed. These principle are more easily describe by asing the model of an ideal fluid which he zero viscousity and incompressible, the continuety of is a Statement of the conservation of mass in all s Let V, and V, be the average flow speeds at these sections of Ac and An of the pipe. Men mass rate = mass rate at one end at another end	
that mass and energy can neither be created not be distroyed. These principle are more easily describe by lasing the model of an ideal fluid which he zero viscousity and incompressible, the continuety of is a Statement of the conservation of mass in all set I, and I, be the average throughout speeds at the scribons of Ac and Az of the pipe.	-
Let V, and V, be the average flow speeds at	1
Let V, and V, be the average flow speeds at	1
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Let V, and V, be the average flow speeds at	90
Let V, and V, be the average flow speeds at	yst
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//١٤/	
majs rate = majs rate	
classed at not and	
White and white the	
S. U. A. = S, U, A.	
Where SUA = mass rate - desity x velocity + Aver.	
- desity + vebcity + Avea.	
J J	7
the momentum is also conserved	
momentum at - normal	
at one end = another end.	
unital End.	MARINE CO

ques 2 b

The best real engine will be a frictioniers engine. The loss of energy due to the friction? visto energy and insufficient combustion will reduce the efficiency of a heat engine from its ideal value. Inte assume, then, we same idealize -tion that we did when we studies the conservation of energy that is a payetly frictionien engine. Ne must also consider the along of sidionless motion "fuctionless" head Granger. If we put a not object at a high temperative against cold object, so wat the Theat flows, then it is not possible to make mat heat flows, then it is not possible to make that heat flows, then it is not possible to make

not heat flow in a reverse direction
by a very small change on the

temperative of either object. But when
we have a particulary frictionsen machine if we push it with a little

Jone the other way, it goes the otherway.

The fuels used by real engines like

coal, gasoline on fissionable material

are all free from friction. These fuels

in the intoking substance. That is

INHY for real engines, we are

concerned to find suitable fuels such

as coal, gasoline or fissionable mat
erial. But in the case of stones ar

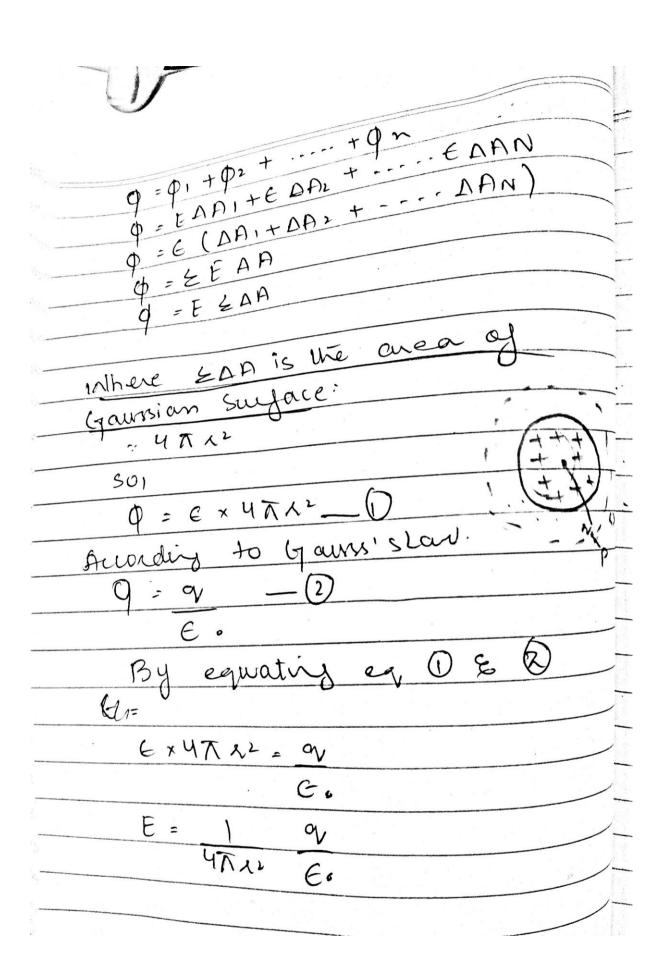
a fuel it will not free from friction

That is why, we cannot use stone

as a fuel in the real engine.

Ono: 3(a) Gauss's Law is very helpful in determining expressions for the electric field.

Let us suppose charge q is
unigoratly distributed in a hypothetical
spherical surgare of radius a since
electric field does not remain the
same everywhere on the surgare as it varies inversely with the square of radial distance so, we divide the whole surgare into a large number of equal and small pat surgares area DAII DAL Maximum elethic for Parrie Vironge Such surgare is: Φ2 = E ΔA2 ON - ELAN total fur is the sum of all fun 3 through surface



as a fuel in the real engine. 2mo: 3(b) Jual Nature of Light:

"igni can behave bour as a wow of particle. When we consider of oelectric effect, the electrons gets elect which is attributed to wir wich is attributed to wir will be enable of light. On the Ter hand, phenomenon üce Hraction and interperence shows

The single of dillace item. is an enample of diffraction of light and hence shows the wave nature of light. The mathematical relation is nxwavelength = axsin (theter) axsin 0 inhere n'is the order of the fridge. a is the suit widht and o depends: on the order of diffraction we role have the central manima in diffraction which is the region of manimum intensities. As we go towards the left on right of the central manima with intensity willy keep reducing ancient

Aues: 4(a) A = 4 + y y = 0 = 2 + 10 m A = 35 m, 1 , m = 2 d = ? , 0 = ? d = Sin 0 = m1 d = (2)(74) > 10 m Sin 0 = 2.58 × 10 m Sin 0 = 2.58 × 10 m Sin 0 = 2.58 × 10 m			Date	
A= $4+y$ y: $0 + 2 + 2 = 4$ H= 8 Data. 1 = $742 \cdot n^{2} \Rightarrow 742 \times 10^{2} \cdot m$ 0 = $35^{2} \cdot m^{2} \Rightarrow 2 = 2$ d= $7 \cdot n^{2} \Rightarrow 2 = 2$ d= $35 \cdot n^{2} \Rightarrow 2 = 2$ Sin 0, $35 \cdot n^{2} \Rightarrow 2 = 2$ Sin 0, $35 \cdot n^{2} \Rightarrow 2 = 2$ Sin 0, $35 \cdot n^{2} \Rightarrow 2 = 2$	Gues: 4101			
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	A STATE OF THE PARTY OF THE PAR			
Data. 1 = 742 nm => 742 +10 m 0 = 35 m, 1 , m, = 2 d=? , 0=? 9 d= Sin 0, = m1 d= (2)(742 × 10 m Sin 0, min => (1)(742 × 10 m) Sin 0, min => (1)(742 × 10 m) 2.58×10 m	A= 4+y			
Dola. 1: 742 n = 2 742 + 10 m 8: 35 m, 1 , m = 2 d=? , 0=? d= Sin 0, = ml sin 0, d= (2) (742 + 10^m) sn 35 d= 2.58 × 10 m Sin 0, mll => (1) (742 + 10^m) 2.58 + 10^m 2.58 + 10^m	Y = 0 T2+2 = 4			(mail) ayabid qarina aqooday o ii qabigi aasani garaa ahadaya daraa
1 = $742 \text{ nm} \Rightarrow 742 \times 10^{\circ} \text{ m}$ 8 = 35° m, 1, m, = 2 d= ? d= Sin 0, = m1 d= $(2)(74) \times 10^{-\circ}$ Sin 0, m11 => (1) $(742 \times 10^{\circ})$ 2.58,10°				
$ \frac{d}{d} = \frac{35}{4} $ $ \frac{d}{d} = \frac{7}{9} $ $ \frac{d}{d} = \frac{1}{9} $ $ \frac{d}{3} = \frac{1}{9} $	The state of the s		The second secon	tings gally per min segments as respective accordinate again
$d = \frac{1}{2}$	1= 742 nm =	23 742 + 10 m		te ver attackele man nament i spell nædt sken som sager.
$d = \frac{2}{3}$ $d = $	m, 1 m = 2			
$d = Sin O_{1} = mA$ $d = \frac{mA}{sin O_{2}}$ $d = (2)(742 \times 10^{-9})$ $Sin 35$ $d = 2.58 \times 10^{-6}m$ $Sin 0_{1} \cdot \frac{m_{1}A}{d} = 2.58 \times 10^{-6}$ 2.58×10^{-6}	Q=?, D=?			
$d = Sin O_{1} = mA$ $d = \frac{mA}{sin O_{2}}$ $d = (2)(742 \times 10^{-9})$ $Sin 35$ $d = 2.58 \times 10^{-6}m$ $Sin 0_{1} \cdot \frac{m_{1}A}{d} = 2.58 \times 10^{-6}$ 2.58×10^{-6}	82			
$d = \frac{mA}{\sin \theta_{1}}$ $d = (2)(74) \times 10^{-4}$ $\sin 35$ $d = 2.58 \times 10^{-6} m$ $\sin \theta_{1} \cdot \frac{m_{1}A}{d} = 2.58 \times 10^{-6}$ 2.58×10^{-6}	de Sin Oz = m1			
Sin 0, $d = (2)(742 \times 10^{-9})$ Sin 0, $m_1A = 2.58 \times 10^{-9}$ $d = 2.58 \times 10^{-9}$ $d = 2.58 \times 10^{-9}$ $d = 2.58 \times 10^{-9}$		8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
$d = (2)(74) \times 10^{-6}$ $\sin 35$ $d = 2.58 \times 10^{-6} m$ $\sin \theta_{1} \cdot m_{1} \Lambda = \sum_{1} (1)(742 \times 10^{-6})$ $d = 2.58 \times 10^{-6} m$				
$d = 2.58 \times 10^{-6} \text{m}$ Sin $\theta_1 = \frac{m_1 \Lambda}{d} = \frac{1}{2.58 \times 10^{-6}}$				
$d = 2.58 \times 10^{-6} \text{m}$ Sin $\theta_1 = \frac{m_1 \Lambda}{d} = \frac{1}{2.58 \times 10^{-6}}$	d= (2)(74) × 10-1)			
Sin D, . m. A => (1) (742×10°) 2.58×10°	25 n ²			1
Sin D, . m. A => (1) (742×16°) d 2.58×10°	d= 2.58 x 10 m			The state of the s
2.58210				
	Sin O, MIA =>	(1) (742×10-2)		
C: 0 0 297	d	2.58,10-4		
310 0 2 0. 20 '	Sin 0 = 0.287			
D= C10- (0.282)	D= Cin- (0)871	1		
(0:05) M	(D = 16.6] M			

Quesi. 5 (a)	
A= 4+ Y= 4+4=8. M= 90 x8 = 720	
Dota L= 530 cm = 5.3m	
$d = 0.25 (n = 0.25 \times 10^{-2} m)$	
- Qul	
Cross Section Area, A. Ra'/4	
(100 Section Area, A: $\nabla \alpha^2/4$ = $\nabla \times (0.25 \times 10^2)$	
2 4.201 x 10 m	
Jang's modulus Y = 5×10° Dyne/cm² = 5×10° N/cm²	
Haiging mass = m = 720g - 720 - 0.72 kg	
Haiging mass = $m = 720g - \frac{720}{1000} = 0.72 kg$	
6 Applied force = F = 3 = 0.72 × 9.8 N = -2.708 \$ 7.056	5 N
" Shess : F = 272363 7.056 N 4.208 +10	
= 1729411.765 N/s	
2 116	
: Strain = Stress = 1729411.765 = 3.45 x/0	
The state of the s	

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