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Name	e ^{fs}
School	
Candidate's Signature	
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232/1	Str.
PHYSICS	A.
Paper 1	,
JULY/AUGUST 2012	
Time: 2 Hours	

Index No/	•••
Date	

232/1 PHYSICS Paper 1 JULY/AUGUST 2012 Time: 2 Hours

KISII SOUTH DISTRICT JOINT EVALUATION TEST-2012 For More Free LC.

Kenya Certificate of Secondary Education (K.C.S.E)

INSTRUCTIONS TO CANDIDATES

- Write your name and index No. in the spaces provided above. a)
- Sign and write the date of the examination in the space provided above b)
- This paper consists of Two sections; A and B c)
- Answer ALL the questions in Section A and B in the spaces provided. d)
- All working MUST be Clearly shown e)
- Non-programmable silent electronic calculators and KNEC Mathematical tables f) may be used for calculations

Section	Question	Maximum score	Candidates score
А	1-11	25	
В	12	12	
	13	14	
	14	12	
	15	8	
	16	16	
	TOTAL	80	

FOR EXAMINER'S USE ONLY

This paper consists of 12 printed pages.

Candidates should check the question paper to ascertain that all pages are Printed as indicated and

that no question is missing

SECTION A (25MKS)

1. The diagram below shows a portion of a micrometer screw gauge used to measure the diameter of a metal pipe. The reading on the gauge when the jaws were fully closed without the pipe was 0.012cm.



2

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Fig3 shows a hydraulic press system using a lever of negligible mass on the side of small piston pivoted at $\sqrt{c^2}$

point P. A force of 100N is applied at R



Use this information to answer question 4 and 5

4. Calculate the force F exerted by small piston on the liquid.

(2mks)

- 5. Find the weight of the Bale supported by the piston on the liquid. (2mks)
- 6. The fig 3 shows apparatus used to observe the behaviour of smoke particles in smoke cell.



a) Explain what is observed.

(lmk)

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	b) Explain what happens if the temperature was raised	(lmk)
	Ere .	
	w ^w	
7	Explain why a glass container with thick glass walls is more likely to crack the	an one with a thin $(2mk_{\rm s})$
	wait when a very not inquid is poured into them. q^{α^2}	(2111K8)
~	fre ^e	
More		
\$°°		
8.	Explain two facts which shows that heat from the sun does not reach the earth convection	n surface by (2mks)

9. Water jets out through small holes in a tall can on the same height as shown in the fig 4 below. Fig,4.



a) State one conclusion that can be made from this observation. (1 mk)

4

b) Explain two adjustments that can be made to increase the distance x without changing the type of liquid or the position of the can. (2mks)

The figure 5a below shows spherical balls placed at different positions on a surface.

Fig,5a.

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10.

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	Descri	be the state of equilibrium of the ball in each position.	(3mks)	
11.	a)	Write down the relationship between mechanical advantage M.A, velocity ratio V efficiency E of a machine.	/.R and (lmk)	
	b)	A machine of efficiency 80% is used to lift a load of 480N with an effort of 60N		
		Calculate the velocity ratio of this machine.	(2mks)	

SECTION B(55MKS

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		SECTION B(55MKS	
12.	a)	Differentiate between speed and velocity.	(1 mk)
		\$ ⁶	
	b) ()	A body of mass 200g is tied to a string and whirled in a vertical circle of rad	ius 1m with a
A. LEC	Y.	speed of 4m/s.	
More		Calculate: i) Angular velocity.	(2mks)
\$°°			

ii) The tension in the string at the highest and lowest position of the body. (3mks)

A block of wood of mass 4kg is suspended from a tree by a long light string. A bullet of c) mass l0g is fired with a velocity of l00m/s and embeds itself in the target. i) At what velocity does the target begin to move after the impact? (2mks)

How high does the target move? ii)

(2mks)

	iii) S	State the end	ergy chang	e on impact	up to the	highest poir	ıt.	(2mks)
			, ser					
			et					
13. a)	Define s	pecific late	nt heat of v	aporization				(1 mk)
	P ^{aper}	\$						
 b) پرچې	² In an ex	periment to	determine	the specific	latent hea	at of vaporiz	zation of a liq	uid using an
re free .	electrica liquid w	ll method, there recorde	he amount d as shown	of heat $,Q$, in the table	required t ,	o vaporise a	a given mass	of, M of
NO.	$Q(s)x10^3$	3.0	4.0	5.0	6.0	7.0	8.0]
\$\$-	M(Kg)	4.0	6.4	8.8	11.2	13.6	16.0	1

de

$Q(s)x10^3$	3.0	4.0	5.0	6.0	7.0	8.0
M(Kg)	4.0	6.4	8.8	11.2	13.6	16.0

On the grid provided plot a graph of $Q \ \mbox{(y-axis)}$ against M. i)

(5mks)



 ii) From your graph, determine the specific latent heat of vaporization of the liquid. (3mks)

c) Calculate the amount of heat required to melt 30g of ice at 0°c (Specific latent heat of ice is 3.34x10⁵Jkg⁻). Give your answer correct to two decimal places. (3mks)

14.	a)	State the law of floatation.	(lmk)		
	b)	A rectangular block of cross section area 0.08m ² is immersed in a liquid of density	у		

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1200kg/cm³. The top and lower surfaces are 200cm and 80cm below the surface of the liquid respectively.

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i) What is the downward force on the top of the block? (2mks)

(3mks)

ii) Calculate the up thrust on the block.

 $\frac{4}{100}$ $\frac{4}{100}$ $\frac{4}{100}$ $\frac{4}{100}$ $\frac{4}{100}$ $\frac{100}{100}$ $\frac{100}{100$

d) The weight of a cube in air is 0.5N When immersed in water, it weighs 0.44N and when in oil weighs 0.46N.Calculate the relative density of the oil. (3mks)

a) Explain why a glass exerts increased pressure when it is compressed in to a small space. (2mks)
b) State the law that relates the volume of a gas to the temperature of the gas. (2mks)
c) A balloon is filled with air to a volume of 200m1 at a temperature 293K.Determine the volume when the temperature rises to 353K at the same pressure. (3mks)



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	b)	Define the term spring constant.	(lmk)
		stint.	
	c)	State two factors that determine spring constant. $e^{2e^{2}}$	(2mks)
Free	 t e 		
for Nore			
	d)	The pointer of unloaded mass of 120g is applied to the spring an	d the pointer reads

38cm.A pan ,in which a mass of 2l0g is placed, is now suspended from the spring and the pointer reads 48cm.Determine the mass of the pan. (4mks)

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