Name: Index No:

Candidate's	s signature	 	•

Date	
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Muungano KCSE Trial Exam

232/1 PHYSICS PAPER 1 July 2017

INSTRUCTIONS: Write your name and index number in the spaces provided above a spaces. A particular to the space provided above a spaces a spaces

Physical Constants

Acceleration due to gravity, $g = 10m/s^2$ or 10m/kg.

For Examiner's Use Only

	Section	Question	Maximum	Candidate's
	00		Score	Score
	A	1 - 13	25	
or in		14	10	
		15	09	
	В	16	14	
	Б	17	11	
		18	11	
		Total Score	80	

This paper consists of 10 printed pages

Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.

SECTION A (25Marks)

Answer all the Questions in this section



6. Figure 2 shows a rectangular tube filled with water up to the neck.



Turn Over

9. *Explain why* a thick glass tumbler is more likely to crack than a thin one when a hot liquid is suddenly poured into it. (1mk)

.....

10. An astronaut standing on the Moon throws a stone vertically upwards. The stone leaves her hand at time t = 0. The line shows how the velocity v of the stone varies with time t until t = 2.0 s.



11. Figure 4 below shows a ball moving through air.



13. The graph below shows the variation of force, F and extension, e for a spring that obeys Hooke's law. If the spring constant of the spring is k, use the graph *to show* that the energy E, stored in the spring when it has extended elastically by an amount e is given by $E=\frac{1}{2}ke^{2}$.



SECTION A 55 (Marks)

Answer all the questions in this section in the spaces provided.

14. Figure 6 below shows a displacement-time graph of the motion of a particle.



Describe the motion of the particle in the region. (3mks) (i) **OA**..... (ii)**AB**..... (iii) **BC**..... (b) A hot air balloon falling through the air attains terminal velocity after a short-time. State the reason why it attains terminal velocity. (1mk) (c) State Newton's first law of motion. (1mk)(d) A ball of mass 0.2kg is thrown vertically upwards with velocity of 8ms⁻¹. The air resistance is 0.5N. Determine: (i) The respirant force on the ball as it moves up (*take* $g = 10ms^{-2}$). (2mks) (ii) The acceleration of the ball. (3mks) 15. a) Name the three modes of heat transfer (3mks)

Turn Over

b) Figure 7 below shows the ball and ring apparatus.



d)	A water pipe of water in th i) The speed	of diameter 5.6cm is e smaller pipe is 4ms d of water in the large	connected to another pipe of ⁻¹ . <i>Calculate</i> , er pipe.	of diameter 1.4cm. T	The speed (3mks)
	ii) The mas	ss flux if the density o	of water is 1g/cm ³ .		(3mks)
17.	(a) Distingu	<i>ish</i> between angular v	velocity and linear velocity.	opers.com	(1mk)
				<u> </u>	
	(b) A per 20cm. The bo	ndulum bob is whirle bb describes an arc of	d with uniform speed in a h length 5cm within 0.1 seco	orizontal circle of rands. <i>Calculate</i> :	adius
	(i)	Angular <i>velocity</i>	www.ft		(3mks)
		·····	jist		
		t papers			
	(ii)	The uniform speed	of the bob along the circula	ar path.	(3mks)
		41-			•••••
	(iii)	<i>The frequency</i> with	the bob moves along the c	ircular path.	(3mks)
(c)	<i>State why</i> th	e bob is accelerating	yet it moves with the unifor	m speed along its p	ath. (1mk)

18.	(a) <i>State</i> the law of floatation.	(1mk)
		••••••
	(b) A cork of volume 100 cm^3 is floating on water. If the density of the cork is 0 and that of water is 1 gcm^{-3} . <i>calculate</i> :	.25gcm ⁻³
	(i) The mass of the cork	(3mks)
	(ii) The upthrust force on the cork.	(3mks)
	A CONTRACTOR OF	
	(iii) The minimum force is required to immerse the cork completely.	(3mks)
	wittee	
	(c) State the effect on the upthrust force in a liquid when the temperature of the line reduced?	(1mk)
	Contraction of the second seco	
	forth	