THE UNITED REPUBLIC OF TANZANIA NATIONAL EXAMINATIONS COUNCIL FORM TWO NATIONAL ASSESSMENT

031

PHYSICS

Time: 2:30 Hours

Thursday, 16th November 2017 a.m.

Instructions

- 1. This paper consists of sections A, B and C with a total of ten (10) questions.
- 2. Answer all questions.
- 3. All answers must be written in the spaces provided.
- 4. All writing must be in blue or black ink except drawings which must be in pencil.
- 5. All communication devices and calculators are not allowed in the examination room.
- 6. Write your Examination Number at the top right corner of every page.
- 7. Where necessary the following constants may be used:
 - (i) Acceleration due to gravity, $g = 10m/s^2$.
 - (ii) Density of water = $1g/cm^3$ or $1000kg/m^3$.

DUESTION NUMBER	SCORE	EXAMINER'S INITIALS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		





11155805

Candidate's Examination Number..... SECTION A (30 Marks)

			SEC	TION A (50 III	answer among the given alternatives and provided.
			do con ab	oose the correc	answer among the g
1.	For	each	of the items (i) - (xx), cii	ber in the box p	rovided.
	wri	te its	of the items (i) – (xx), ch letter beside the item num	Dei m m.	science subjects which need
			Chamietry and Bio	logy are natural	science subjects
	(i)	Ph	practical and theory W	ork for learning	
		A	practical and theory	Action 1	
		В	only theory for learning	16.	
		C	practical work only.		
		D	only observation.		4
	200		e e e e e e e e e e e e e e e	cofety precautio	on in the Physics laboratory:
	(ii)	Wi	nich of the following is a	ha laboratory	on in the Physics laboratory?
		A	Domo experiment in u	ne laboratory	
		В	Handling of apparatus Use equipment with ca	re in the labora	atory
		C	Do anything in the lab	oratory	
		D	Do anything in the rao	Olutor)	c - hottle
		44.6	to the second seed will work	use to measure	accurately the inside diameter of a bottle
	(iii)	Wh	ich instrument win you	use to measure	
		nec		D	micrometer screw gauge.
		A	tape measure.	B D	vernier calipers.
		C	meter rule.	D	vermer camperes
					s also as a marco?
	(iv)		ich of the following state		t about mass:
	19.00	A	It is measured by bean	n balance	
		В	It is measured by sprir	ng balance	
		C	It varies with place		
		D	It can be zero.		
	(v)	Ah	ydrometer is an instrum	ent used to me	asure
		A	the volume of liquids.		
		В	the density of liquids.		
		C	the density of solids.		
		D	the volume of solids.		
			The state of the s		
	(wi)	Wh	en a hody of mass Mis	lifted through:	a height h, it possesses the energy known as
	(vi)	-			Control of the contro
		A	kinetic energy.	В	chemical energy.
		C	light energy.	D	potential energy.
	(vii)	If th	e angle between two pla	ane mirrors is	60°, then the number of images will be
		A	2 B 3	C	
		17.7			, D 3
	(viii)	The	presence of charge in a	material on 1	an dama and a sale
	1	٨	alactrophomes D	material call (be demonstrated by
		A	electrophorus. B	earth wire. (C gold leaf. D electroscope.
					- cicciroscope.

Zifeit e		Candida	te's Examina	tion Nu	mber	
18220	A comment of 0.2	A flowe throng	h a resistor of 4	Ω. The p	otential difference	across a
(ix)	resistor is	A Hows throng			200	
	A 20V	B 0.8V	C 0.05V	D	8V	
(x)	The process of re	emoving magne	tism from a mat	erial is kn	own as	
	A polarization		B dem	agnetizati	on.	
	C magnetizati	ion.	D mag	netizing.	.1	
(xi)	How can a real in	nage be disting	uished from a vi	irtual ima	ge?	
4000	A Real image	is inverted whi	le virtual image	is uprigh	t	
	B Real image	is upright while	e virtual image	is inverted	1	
	C Virtual ima	ge is formed b	y a convergent	rays wh	ile real image is	
	formed by o	livergent rays				
			a convergent ra	ys while	virtual image is	
	formed by o	livergent rays				
(xii)	Why an atom is e	lectrically neut	ral?			
(,,,,)		f equal number				
			of protons and	electron	S	
	C It consists o	f equal number	of electrons ar	nd neutro	ns	
	D It consists of	f equal number	of protons and	neutron	S	
-	current in a circuit	is			stor of resistance	
1	A 0.5A	B 2A	C 0.5Ω	D	288Ω	
(xiv) I	A 0.5A f a North pole is	B 2A		D		
(xiv) I	A 0.5A f a North pole is troking begins is	B 2A used in the s	troking method	D d of mag	288Ω metization, the en	
(xiv) I	A 0.5A f a North pole is troking begins is	B 2A	troking method	D	288Ω	
(xiv) I	f a North pole is troking begins is South pole.	B 2A used in the state B North p	troking methodole. C V	D d of mag West.	288Ω metization, the ends	nd where th
(xiv) I s A xv) F	f a North pole is troking begins is South pole.	B 2A used in the state B North p	troking methodole. C V	D d of mag West.	288Ω metization, the en	nd where th
(xiv) I	f a North pole is troking begins is South pole.	B 2A used in the s B North p	troking methodole. C V	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	nd where th
(xiv) I s A xv) F	f a North pole is troking begins is South pole.	B 2A used in the state B North p	troking methodole. C V	D d of mag West.	288Ω metization, the ends	nd where th
(xiv) I s A xv) F	f a North pole is troking begins is South pole.	B 2A used in the s B North p	troking methodole. C V	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	nd where th
(xiv) I s A (xv) F	f a North pole is troking begins is South pole.	B 2A used in the s B North p	troking methodole. C V	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	nd where th
(xiv) I s A xv) F X	f a North pole is troking begins is South pole.	B 2A used in the s B North p	troking methodole. C V	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	is the weig
(xiv) I s A xv) F X	f a North pole is troking begins is South pole.	B 2A used in the s B North p	troking methodole. C V	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	nd where th
(xiv) I s A xv) F X	f a North pole is troking begins is South pole.	B 2A used in the s B North p ruler balanced	troking methodole. C V	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	is the weig
(xiv) I s A xv) F X	f a North pole is troking begins is South pole.	B 2A used in the s B North p ruler balanced	troking methodole. C V	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	is the weig
(xiv) I s A xv) F X	f a North pole is troking begins is South pole. igure 1 shows a server a s	B 2A used in the state B North parties balanced 0cm	troking methodole. C V	D d of mag	288Ω metization, the ends. D East. at its ends. What	is the weig
xiv) I s A xv) F X	f a North pole is troking begins is South pole.	B 2A used in the s B North p ruler balanced	troking methodologie. C No by placing the	D d of mag West.	288Ω metization, the ends. D East. at its ends. What	is the weig

91		Candidate's	Examination	n Nu		
(xvi) 1	Which of the follo	wing is an example	of a third clas	s leve	11	
	A Scissors		D I toming	A COLUMN		
(Pliers		D Nut crac	, act		
(maily F	Nistance between I	wo moving objects	will change i	F		
A	both are movi	ng with the same ve	elocity.			
В		same acceleration.				
C	both have diffe	erent acceleration.				
D	both have no a	cceleration.				
(maiii) W	high of the follow	ving best illustrates	Newton's th	ird la	w?	
A	Inertia		D Monte			No.
C	Rocket propuls	ion	D Circula	r mot	ion	
	ich of these reso Wave energy	urces of energy is	B Bio fue	IS		
A C	Wave energy Radiant energy th item in List A		D Fossil f	fuel at B	y writing a	a letter of a correle provided.
A C	Wave energy Radiant energy th item in List A selow the numbe	with a correct res	D Fossil f	fuel at B	in the tab	ole provided.
A C Match eac esponse b	Wave energy Radiant energy th item in List A selow the numbe	with a correct restrong of the correspond	D Fossil f	fuel at B t	in the tab	st B
A C Match eace esponse b	Wave energy Radiant energy th item in List A selow the number	with a correct restrong of the corresponding A leasure length, dep	D Fossil f	fuel at B	Li Measurin	ole provided.
A C Match each esponse b	Wave energy Radiant energy th item in List A selow the number L astrument that mexternal diameter	with a correct restrong of the corresponding ist A leasure length, depress.	D Fossil for sponse in List ding item in I	is fuel at B to List A	Li Measurin Pipette.	st B g cylinder.
A C Match eacesponse besii) An in and e	Wave energy Radiant energy th item in List A selow the number L astrument that mexternal diameter astrument that mexternal diameter	with a correct restrong of the corresponding ist A leasure length, depressions and the corresponding is a sure length, depressions are sure volumes of the correct restrictions.	D Fossil for sponse in Listed ing item in I oth, internal of liquid.	is fuel at B t List A	Li Measurin	st B g cylinder. aliper.
A C Match each esponse be and e ii) An ir iii) An ir	Wave energy Radiant energy th item in List A selow the number L astrument that m external diameter astrument that m astrument that m	with a correct restroic of the corresponding ist A leasure length, departs. leasure volumes of easure force of pure	D Fossil for sponse in Listed ing item in I for the figure in I for the formal fo	at B to List A B C	Li Measurin Pipette. Vernier c Glass tun	st B g cylinder. aliper. abler.
i) An in and e ii) An ir iv) An ir	Radiant energy Radiant energy th item in List A below the number L astrument that m external diameter astrument that m astrument that m astrument that m	ist A leasure length, depressive volumes of easure force of puttransfer specific	D Fossil for sponse in Listed ing item in I for the figure in I for the formal fo	A B C D	Li Measurin Pipette. Vernier c Glass tun Spring ba	st B g cylinder. aliper. alance.
i) An ir and e ii) An ir iv) An ir liquid	Radiant energy Radiant energy th item in List A below the number L astrument that m external diameter astrument that m astrument that m astrument that m astrument that m	ist A leasure length, depressive volumes of easure force of puttransfer specific	D Fossil is sponse in List ding item in I th, internal of liquid.	A B C D E	Li Measurin Pipette. Vernier c Glass tun Spring ba Clinical t	st B g cylinder. aliper. alance. hermometer.
i) An in and e ii) An ir iii) An ir iii) An ir iiquic	Radiant energy Radiant energy th item in List A pelow the number Leastrument that mexternal diameter astrument that meastrument that measurement that measurem	ist A leasure length, depressions assure volumes of the correspondence of put transfer specific tiner to another.	D Fossil is sponse in List ding item in I th, internal of liquid.	A B C D E F	Li Measurin Pipette. Vernier c Glass tun Spring ba Clinical t	st B g cylinder. aliper. alance.
A C Match each esponse be and exponse be and expons	Radiant energy Radiant energy th item in List A below the number Lanstrument that material diameter instrument that material from one containstrument that material from one	ist A leasure length, depressions and the correspondence of put transfer specific liner to another. leasure body temp	B Bio fue D Fossil f sponse in Lis ding item in I oth, internal f liquid. all. amount of erature.	A B C D E F	Li Measurin Pipette. Vernier c Glass tun Spring ba Clinical t	st B g cylinder. aliper. alance. hermometer.
A C Match each esponse be sponse be	Radiant energy Radiant energy th item in List A pelow the number Leastrument that mexternal diameter astrument that meastrument that measurement that measurem	ist A leasure length, depressions assure volumes of the correspondence of put transfer specific tiner to another.	D Fossil is sponse in List ding item in I th, internal of liquid.	A B C D E F	Li Measurin Pipette. Vernier c Glass tun Spring ba Clinical t	st B g cylinder. aliper. alance. hermometer.
A C Match each esponse be and expense be a subject to the expense be and expense be a subject to the expense be a subjec	Radiant energy Radiant energy th item in List A below the number Lanstrument that material diameter instrument that material from one containstrument that material from one	ist A leasure length, depressions and the correspondence of put transfer specific liner to another. leasure body temp	B Bio fue D Fossil f sponse in Lis ding item in I oth, internal f liquid. all. amount of erature.	A B C D E F	Li Measurin Pipette. Vernier c Glass tun Spring ba Clinical t Magdebu	st B g cylinder. aliper. aliper. alance. hermometer. arg experiment.

2.

71170	82	Candidate's Examination Number				
3.		Complete each of the following statements by writing the correct answer in the space provided.				
	(i)	Basic physical proportions of measurement which cannot be obtained from any other proportions by either multiplication or division are called				
	(ii)	Staircases, winding roads uphill, wedges and a screw are physical example of				
	(iii)					
	(iv)	Objects which emit light when they are hot are called				
	(v)	Materials which do not obey Hooke's law are known as				
		SECTION B (50 Marks)				
1.	(a)	What do you understand by the following terms? (i) Work				
(1	o)	Calculate the power of a pump which can lift 200kg of water through a vertical				

(b) Calculate the power of a pump which can lift 200kg of water through a vertical height of 6m in 10 seconds, given g = 10m/s².

		Candidate's Examination Number
particular de	-	Candidate's Examination
1.2 China		Explain the meaning of the following terms.
	(c)	VALVATION CALCULATION CONTRACTOR
		(1) Kilowatti
		######################################
		(ii) Kilojoules

	2.02	(i) What is acceleration?
5.	(a)	100

		(ii) A car with a velocity of 60km/h is uniformly retarded and brought to rest after
		(ii) A car with a velocity of 60km/h is uniformly retarded and of
		10 seconds. Calculate its acceleration.
		(i) Distinguish between distance and Displacement
	(b)	(i) Distinguish between distance and Displacement

11	1 PREP	Candidate's Examination Number
		(ii) Provide one example of the law of inertia of a body

	(c)	What mass will be given to a body with an acceleration of 7m/s ² by a Force of 3N?
	(4)	That made and be given to a body with an accordance of the body with an accordance of the body
5.	(a)	State the Pascal's principle of pressure

	(b)	What are the three factors that affect the liquid pressure?
		(i)
		(ii)
		(iii)
	(c)	Calculate the area of the object if the pressure exerted is 0.2N/m ² and its force is 2N.

12/0007		Candidate's Examination Number
7.	(a)	Define the term light.
	(b)	By aid of a diagram state the laws of reflection.
	100	
	**	***************************************
	**	
	**	

- (c) How many images can be formed if two mirrors are set?
 - (i) At angle of 60°

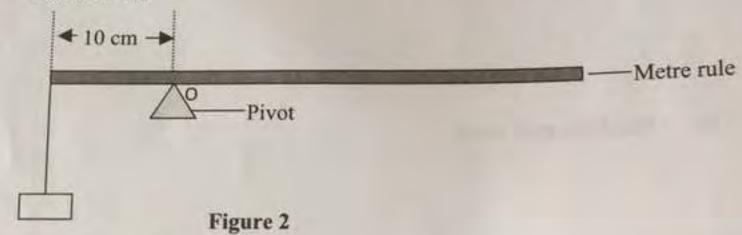
(ii) Parallel to each other.

8. (a) State the principle of moments.

......

......

(c) A metre rule is pivoted about a point O as shown in Figure 2 and it is balanced by a load of 0.2 N.



Calculate the mass of the rule.

1.0000			Candidate's Examination Number
			SECTION C (20 Marks)
9.	(a)	Wh	at are the uses of the following devices?
		(i)	Manometer

		(ii)	Hare's apparatus (inverted U-tube)

		(iii)	

		(iv)	Barometer
		6.7	
	/hi	Enni	ain why a big Elephant manage to walk comfortably in mad soil without sinking
	(b)		e human being may sink easily?

	,	******	***************************************
	,	****	
	*		
	*		
	3.0		
	**		

	***		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	1		***************************************
	+++.		

	13,55	100000	
	****	*****	

TTITPRET	p	Candidate's Examination Ivaliant pressure depends on
	(c)	Draw a well labeled diagram which demonstrates that liquid pressure depends on
		depth.
	200	to the description of a second algorithms
10.	(a)	Mention three uses of current electricity.

		(ii)
((b)	Explain why it is advised to connect bulb in parallel arrangement during installation of electricity in most building?
-		
		······································
	- 1	
4	-	

	Cana	lidate's Examination	on Number	+++++
*******		***************************************		

******	*****************			
in seri	ty Ohms' law in the I	ery B of two cells, a sw eter V across resistor	who were conducting an exp the following instruction: witch K, an ammeter A and R. Draw a well labelled	rheostat
				1
1/6				