042 Candidate's Number.....

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ZANZIBAR EXAMINATION COUNCIL

FORM THREE ENTRANCE EXAMINATION 2014

PHYSICS

TIME:2.30 Hours

INSTRUCTIONS TO CANDIDATES

1. This paper consists of THREE sections A ,B and C.
2. Attempt all questions in Sections A and B and only THREE questions in Section C.
3. ALL answers must be written in the space provided.
4. Write your centre and index number as indicated on the top right corner of each page
5. Where necessary the following constants may be used.
   i) Acceleration due to the gravity = $10 m/s^2$
   ii) Pie, $\pi = 3.14$
   iii) Density of water = $1 g/cm^3$ or $1000 kg/m^3$
6. Tick the number of the question which you have attempted in the table here under.

	FOR EXAMINER'S USE ONLY	
QUESTION NUMBERS	MARKS	SIGNATURE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
TOTAL		

THIS PAPER CONSISTS OF 12 PRINTED PAGES

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SECTION – A (30 MARKS)

ANSWER ALL QUESTIONS FROM THIS SECTION

1. Write the letter of the most correct answer in the bracket against each question

i) The liter is the standard unit that is used for measuring (C)

A: Volume of cylinder
B: Volume of regular shape
C: Volume of liquid
D: Volume of irregular shape

ii) If an object weighs 30N on the Earth, What is its mass? ( )

A: 0.3gm B: 3gm C: 0.3kg D: 3kg

iii) Which force enables insects such as water strider to walk ( )

A: Adhesive force B: Surface tension
C: Cohesive force D: Gravitation force

iv) The process by which a magnet loses its magnetism is called ( )

A: Magnetic field B: Magnetization
C: Demagnetization D: Magnetic poles

v) A combined capacitance of two capacitors of 20μF and 30μF when connected in parallel is ( )

A: 50μF B: 600μF C: 1.5μF D:μF

vi) The work done which causes a force of 1 Newton to move an object through the distance of 1m – is called ( )

A: 1 Newton B: 1 Joules C: 1 meter D: 1 watt

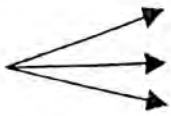
vii) The Periscope is the device that fitted with two parallel plane( ) mirrors at each end, that tilted at an angle _____

A: 60 degree B: 90 degree
C: 120 degree D: 45 degree

vii) Time and length are: ( )

A: Vector quantities B: Fundamental quantities
C: Scalar quantities D: Derived quantities

ix) The name of the following beam of light is called ( )



A: Convergent B: Parallel
C: Divergent D: Jumping

x) In a certain circuit there are two capacitors C_1 and C_2 which connected in series. The formula of total capacitor C is ( )

A: $C = C_1 + C_2$ B: $C = C_1 \times C_2$

C: $C = \frac{C_1 + C_2}{C_1} + C_2$ D: $C = \frac{C_1}{C_2}$

2. Match each of the statement given in List B with appropriate words given in List A. Each response in List B can be used only once.

LIST A		LIST B
i)	Measure current _____	a) Triple balance
ii)	ATM Cards _____	b) Moment
iii)	Force x distance _____	c) Neutral point
iv)	Wheel barrow _____	d) Efficiency
v)	Velocity Ratio _____	e) 78 degree
vi)	Mass of substance _____	f) Newton's law
vii)	The magnetic field _____	g) Ammeter
viii)	Alcohol _____	h) Magnet
ix)	Collision _____	i) Watt
x)	Unit of Power _____	j) Second – class levers
		k) Depression

3. Fill in the blank spaces with the correct word(s) in the statement given below

ii) Hydrometer is the device used to _____ and _____ the relative density.

iii) The types of error are _____ and _____

iv) Incident ray, _____ and _____ all are on the same plane.

v) Metre rule measures the _____ of the object while triple balance is used to measure the _____ of the object.

SECTION B (40 MARKS)
ANSWER ALL QUESTIONS IN THIS SECTION

4. a) Define the terms

i) Temperature

_____

_____

ii) Lower fixed point

_____

_____

b) Why water is not used as a thermometric liquid. Give three reasons

_____

_____

_____

_____

_____

_____

c) Convert the 248°F to °C

5. a) State the law of floatation

b) Why a piece of iron sink in water while a ship made of steel floats. (Give three reasons)

c) When a wooden block float in water, it displaced $0.006m^3$ of the water. Find the weight of the wooden block when it is in air.

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6. Define the following terms and state the S.I. Unit

i) Work

ii) Power

b) An engine raises a load of 100kg from a mine which is 100m deep. If the load is raised at 2 minutes. What is the power of the engine.

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7. a) i) State the [illegible] of static electricity

ii) What is the difference between conductor and insulator?

b) Draw the symbols and give out the uses of the following devices

DEVICE	SYMBOL	USES
i. Switch		
ii. Ammeter		
iii. Capacitor		
iv. Cell		

c) If the reading of ammeter is 0.3A and the reading of voltmeter is 3V respectively what is the resistance of the circuit?

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6 a) Define the following terms in light with their examples

i) Transparent materials

ii) Translucent t materials

iii) Opaque materials

b) Draw the diagram to show how eye can see the object through the periscope

c) Draw the plane mirror MR and show

i) Incident ray

ii) Reflected ray

iii) Normal

SECTION C (30 MARKS)

ANSWER ANY THREE (3) QUESTIONS

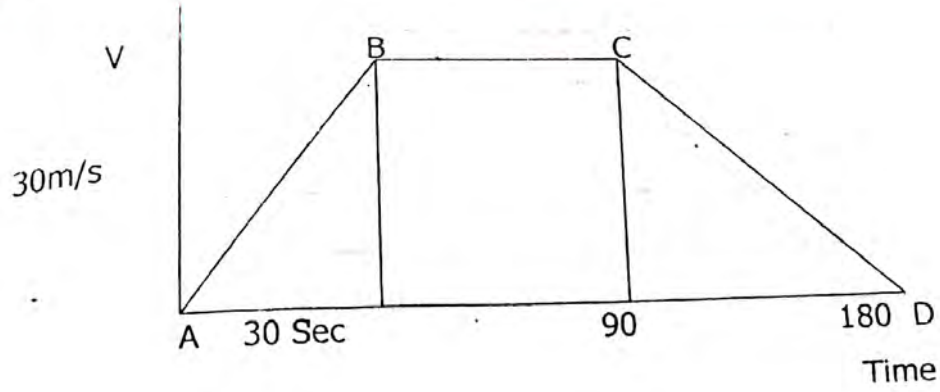
a) Explain briefly the differences between density and relative density.

b) Explain the meaning of this statement "the density of wood is $0.8g/cm^3$

c) A mass of empty bottle is 18g, 44g when bottle full of water and when full of second liquid. Calculate the density of the liquid.

10. a) What do you mean by term retardation

c) The figure below represents velocity – time graph of the motion of an object



Find the

i) Acceleration along the path AB

ii) Retardation along the path CD

iii) Total distance travelling along the whole journey.

11. a) i) Define Pressure

ii) State three uses of hydraulic pressure

b) A force of 5N is applied to the smaller piston of hydraulic pressu
smaller piston has the cross-sectional area of $0.001m^2$ and the la
piston has cross-sectional area of $0.1m^2$. Find the force produce
large piston.