Candidate's examination number.....

SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM THREE ENTRANCE EXAMINATION

051 RADIO AND TV SERVICING

TIME 2:30 HOURS FRIDAY, 07TH DECEMBER 2018 pm

INSTRUCTIONS TO CANDIDATES

1. This paper consists of sections A, B and C.
2. Answer all questions in sections A,B and C.
3. All answers must be written in the space provided.
4. Write your examination number on every page of this booklet.
5. Calculators and cellular phones are not allowed in the examination room.

FOR EXAMINER'S USE ONLY					
Question number	**Marks**	**Signature**	**Question number**	**Marks**	**Signature**
1			**8**		
2			**9**		
3			**10**		
4			**11**		
5			**12**		
6			**13**		
7			**14**		
TOTAL					

This paper consists of 8 printed pages.

Candidate's examination number.....

SECTION A: (10 marks)

Answer ALL questions

1. Choose the letter of the correct answer and write it below the item number in the table below.

i) The essential element of an electronic instrument is

A: transducer B: signal conditioner

C: indicating device D: All of the above

ii) A capacitor consist of two

A: insulation separated by dielectric

B:conductor separated by insulator

C: ceramic plates and one mica disc D: Silver coated insulator

iii) The Ampere is defined in terms of

A: electric force between two charges

B: magnetic force between two currents

C: heating effects in a conductor

D: chemical effects during electrolysis

iv) A current of I-Ampere passes through a resistance for t- seconds and E-Joules of energy is dissipated. The p.d across the resistance is

A: EIt B: It/E C: E/It D: Et/I

v) Which of the following is equivalent to 1-ohm/

A: 1V/A B:1A/V C:1VA D:1J/C

vi) Which of the following shows the relationship between primary voltage and secondary voltage of the transformer?

A: NpVp =NsVs B: Vs/Vp =Np/Ns

C:Vs/Vp =Ns/Np D: Vp+Vs =Np +Ns

vii) The SI unit of voltage, current and resistance are

A: Volt, Ampere and Ohms B: mater, kilogram and Newton

C: Volts, watts and Newton D: Newton, joules and watts

viii) Acceptor type semiconductor is formed by adding impurity of valence

A: 3 B: 4 C: 5 D: 6

ix) The cut in voltage for germanium is

A: 0.2V B: 0.6V C: 1.1V D: None of the above.

x) PN junction behave like

A: Diode B: cathode C: Triode D: Tetrode

ANSWERS

i	ii	iii	iv	v	vi	vii	viii	ix	x

SECTION B: (30 marks)
Answer ALL questions.

2. Identify three (3) most important instruments used in electronic workshop.

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3. Write down a formula that can be used to calculate the total resistance of three (3) resistors in parallel

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4. Sketch the schematic symbol of

   i) LED ii) Tunnel diode iii) zener diode

5. Write down three (3) types of transformer that are used in radio receiver.

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6. Distinguish between

   i) Insulator and conductor

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   _____

   _____

   ii) Step up transformer and step down transformer.

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   _____

7. Draw a simple circuit to show how an ammeter is connected to measure current passing through a resistor R.

8. Determine the resistance value if the current flowing is 0.2mA at a potential difference of 220V.

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9. a) Define inductor.

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b) Find the equivalent inductance when an inductor of 30H, 20H and 40H are connected in parallel.

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10. Name the two (2) most common semiconductor materials used.

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_____

11. Give the numerical resistance value of the following color codes.

a) Red –Red –Brown –Gold

_____

b) Brown –Green – Grange - Silver

SECTION C: (60 marks)

Answer any three (3) questions.

12. a) Write down two (2) advantages of semiconductor diode over the vacuum tube diode.

b) Give three (3) differences between light emitting diode and photodiode.

c) Describe the construction of PN junction diode.

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13. a) Explain the properties of resistors which are connected in series.

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b) Identify any two (2) methods that can be used to determine the value of resistor.

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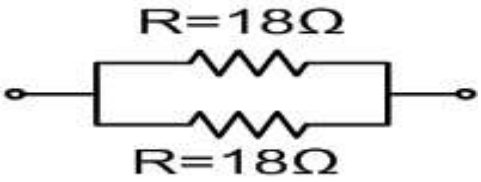
c) Study the circuit diagram below and answer the following questions



i) Re-draw the circuit diagram by adding 10Ω resistor in parallel with the given combination.

ii) If the circuit re-drawn in (i) above is supplied with 5V, determine the total circuit current.

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14. a) Name the two (2) common components that are used in filter circuit.

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b) Draw the circuit diagram of bridge full wave rectifier with π -filter circuit.

c) Distinguish between donor impurity and acceptor impurity.

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d) Write down the purpose of using soldering iron in an electronic workshop.

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