

EDO STATE POLYTHENIC, USEN

1ST EXAMINATION,

ND 1 {ELECTRICAL GRAPHICS (EEC 111)}

70 MINUTES

1. The unit of charge is the
(A) **coulomb**
(B) newton
(C) joule
(D) watt
2. The unit of force is the
(A) coulomb
(B) **newton**
(C) joule
(D) watt
3. The unit of work or energy is the
(A) coulomb
(B) newton
(C) **joule**
(D) watt
4. The unit of power is the
(A) coulomb
(B) newton
(C) joule
(D) **watt**
5. The unit of electric potential is the
(A) coulomb
(B) **volt**
(C) joule
(D) watt
6. The unit of electric resistance is the
(A) **ohm**
(B) newton
(C) joule
(D) watt

7. A is used to prevent overloading of electrical circuits.
(A) coulomb
(B) newton
(C) joule
(D) **fuse**
8. If a current of 5 A flows for 2 minutes, find the quantity of electricity transferred.
(A) **600C**
(B) 60C
(C) 6C
(D) 6000C
9. A mass of 5000 g is accelerated at 2 m/s^2 by a force. Determine the force needed.
(A) 100N
(B) 1000N
(C) **10 N**
(D) 1N
10. Find the force acting vertically downwards on a mass of 200 g attached to a wire.
(A) 1.62 N
(B) 1.92 N
(C) 0.962 N
(D) **1.962 N**
11. A portable machine requires a force of 200 N to move it. How much work is done if the machine is moved 20 m
(A) 40000 Nm or 40 kJ
(B) 400 Nm or 4 kJ
(C) **4000 Nm or 4 kJ**
(D) 4 Nm or 4 KJ
12. A portable machine requires a force of 200 N to move it. The work done is 4000Nm if the machine is moved 20 m. what average power is utilized if the movement takes 25 s?
(A) **160 W**
(B) 1600 W
(C) 16 W
(D) 16000 W

A mass of 1000 kg is raised through a height of 10 m in 20 s.

13. What is the work done
(A) 8.1 kNm or 8.1 kJ
(B) **98.1 kNm or 98.1 kJ**
(C) 9.1 kNm or 9.1 kJ
(D) 98 kNm or 98 kJ

14. What is the power developed?

- (A) 905 W or 0.905 kW
- (B) 405 W or 4.05 kW
- (C) 4905 W or 4.905 kW**
- (D) 490 W or 4.90 kW

Find the conductance of a conductor of resistance

15. 10 Ω

- (A) 0.1 S**
- (B) 10 S
- (C) 0.2 mS
- (D) 0.5 mS

16. 5 K Ω

- (A) 0.1 S
- (B) 10 S
- (C) 0.2 mS**
- (D) 0.5 mS

17. 100 m Ω

- (A) 0.1 S
- (B) 10 S**
- (C) 0.2 mS
- (D) 0.5 mS

18. A source e.m.f. of 5 V supplies a current of 3 A for 10 minutes. How much energy is provided in this time?

- (A) 90 kJ
- (B) 19 kJ
- (C) 0.9 kJ
- (D) 9 KJ**

An electric heater consumes 1.8 MJ when connected to a 250 V supply for 30 minutes.

19. Find the power rating of the heater

- (A) 1 kW**
- (B) 11 kW
- (C) 10 kW
- (D) 12 Kw

20. Find the current taken from the supply.

- (A) 114 A
- (B) 41 A
- (C) 4 A**
- (D) 14 A

21. What current must flow if 0.24 coulombs is to be transferred in 15 ms?
(A) 106 A
(B) 16 A
(C) 160 A
(D) 1A
22. If a current of 10 A flows for four minutes, find the quantity of electricity transferred.
(A) 20 C
(B) 240 C
(C) 24 C
(D) 2400 C
23. states that the current I flowing in a circuit is directly proportional to the applied voltage V and inversely proportional to the resistance R , provided the temperature remains constant.
(A) **Ohm's law**
(B) Ken's law
(C) Charles's law
(D) Flemmy's law
24. The current flowing through a resistor is 0.8 A when a p.d. of 20 V is applied. Determine the value of the resistance.
(A) 5 Ω
(B) 250 Ω
(C) 25 Ω
(D) 205 Ω
25. Determine the p.d. which must be applied to a 2 k Ω resistor in order that a current of 10 mA may flow.
(A) 2 V
(B) 200 V
(C) 20 V
(D) 2000 V
26. A coil has a current of 50 mA flowing through it when the applied voltage is 12 V. What is the resistance of the coil?
(A) 20 Ω
(B) 240 Ω
(C) 40 Ω
(D) 2400 Ω

A 100 V battery is connected across a resistor and causes a current of 5 mA to flow.

27. Determine the resistance of the resistor.

- (A) 220 k Ω
- (B) 120 k Ω
- (C) 200 k Ω
- (D) 20 k Ω**

28. If the voltage is now reduced to 25 V, what will be the new value of the current flowing?

- (A) 0.25 mA
- (B) 1.25 mA**
- (C) 1.215 mA
- (D) 1.225 mA

What is the resistance of a coil which draws a current of

29. 50 mA

- (A) 2400 Ω**
- (B) 600 Ω
- (C) 400 Ω
- (D) 600 000 Ω

30. 200 μ A from a 120 V supply?

- (A) 2 400 Ω
- (B) 600 000 Ω**
- (C) 400 Ω
- (D) 6 000 Ω

A 100 W electric light bulb is connected to a 250 V supply.

31. Determine the current flowing in the bulb

- (A) 0.4 A**
- (B) 0.6 A
- (C) 0.5 A
- (D) 0.4 A

32. Determine the resistance of the bulb.

- (A) 62 Ω
- (B) 25 Ω
- (C) 6250 Ω
- (D) 625 Ω**

33. Calculate the power dissipated when a current of 4 mA flows through a resistance of 5 K Ω

- (A) 0.8 W
- (B) 1.08 W
- (C) 0.7 W
- (D) 0.08 W**

An electric kettle has a resistance of $30\ \Omega$.

34. What current will flow when it is connected to a 240 V supply?

- (A) 81 A
- (B) 18 A
- (C) 8 A**
- (D) 80 A

35. Find also the power rating of the kettle.

- (A) 1.92 kW**
- (B) 1.9 kW
- (C) 0.92 kW
- (D) 1.2 Kw

Lecturer in charge: *Engr. Osadebamwen Kenneth Ojo*