UNIVERSITY COLLEGE TATI

UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET	
COURSE CODE	: MPU 3352
COURSE	: SISTEM BEKALAN ELEKTRIK DI MALAYSIA
SEMESTER/SESSION	: 2-2023/2024
DURATION	: 1 HOUR 30 MINUTES

Instructions:

1. This booklet contains 30 questions. Answer **ALL** questions.
2. All answers should be written in **OMR form.**
3. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 11 PRINTED PAGES INCLUDING COVER PAGE

1. Define the bandgap for the semiconductor. (1 mark)
   a) There is no energy gap between the conduction & valance band.
   b) The bandgap of a semiconductor is greater than the conductor but smaller than an insulator.
   c) The bandgap of a semiconductor is smaller than the conductor but bigger than an insulator.
   d) The band gap in insulator is huge.

2. If 50 J of energy are available for every 10 C of charge, calculate the voltage (1 mark)
   a) 4 V
   b) 5 V
   c) 6 V
   d) 7 V

3. How many coulombs of charge do 93.8×10^{16} electrons represent? (1 mark)
   a) 15×10^{3} C
   b) 15×10^{2} C
   c) 15×10^{-2} C
   d) 15×10^{-3} C

4. Ten coulombs of charge flow past a given point in a wire in 2 s. What is the current in amperes? (1 mark)
   a) 3 A
   b) 4 A
   c) 5 A
   d) 6 A

5. A voltage of 3 V is applied across a light bulb. The resulting current was measured at 10 A. What is the resistance of the light bulb? (1 mark)

a) 0.6 Ω

b) 0.5 Ω

c) 0.4 Ω

d) 0.3 Ω

6. Which one of the following is alternating current. (1 mark)

a) It flows in one direction in the circuit

b) It is the current of magnitude varying with time

c) Cannot travel very far due to its energy loses

d) The frequency is zero

7. Which of the following is the type of generation station that does not exist in Malaysia. (1 mark)

a) Gas power station

b) Steam power station

c) Nuclear power station

d) Solar power station

8. Which of the list below requires the highest maintenance cost. (1 mark)

a) Nuclear electric power station

b) Hydro power station

c) Steam power station

d) Solar power station

9. Which of the list below produce clean emission. (1 mark)
   a) Nuclear power station
   b) Hydro power station
   c) Steam power station
   d) Solar power station

10. Which of the list has the lowest efficiency. (1 mark)
   a) Nuclear power station
   b) Hydro power station
   c) Steam power station
   d) Solar power station

11. Define (a) in Figure 1. (1 mark)

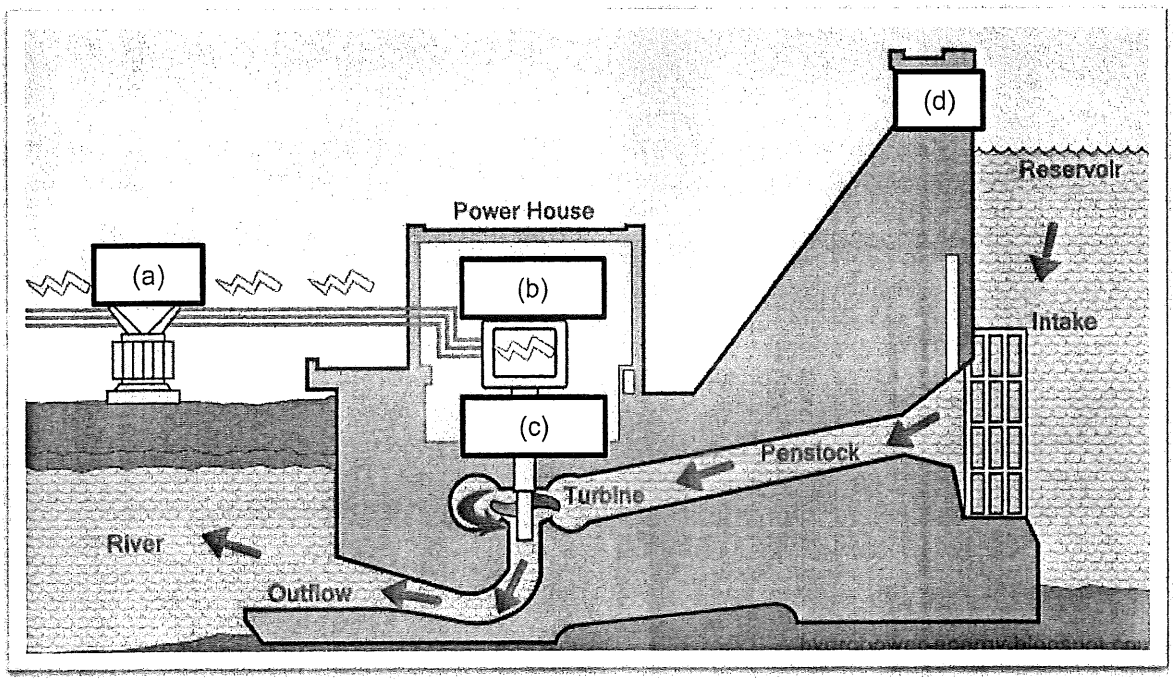

Figure 1: Hydro electric power system

   a) Transformer
   b) Dam
   c) Power lines
   d) Generator

12. Define (b) in Figure 1. (1 mark)

a) Transformer
b) Dam
c) Power lines
d) Generator

13. Define (c) in Figure 1. (1 mark)

a) Transformer
b) Dam
c) Power lines
d) Generator

14. Define (d) in Figure 1. (1 mark)

a) Transformer
b) Dam
c) Power lines
d) Generator

15. What is the type of transmission cable in Figure 2? (1 mark)

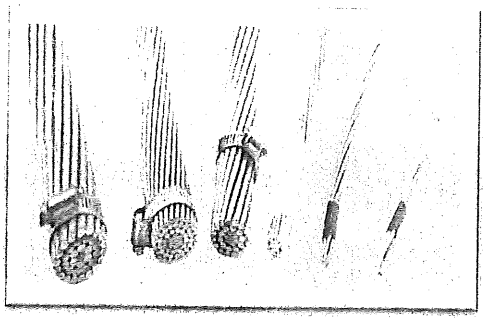

Figure 2

a) ACSR
b) AAAC
c) ACAR
d) AAC

16. What is the type of transmission cable in Figure 3? (1 mark)

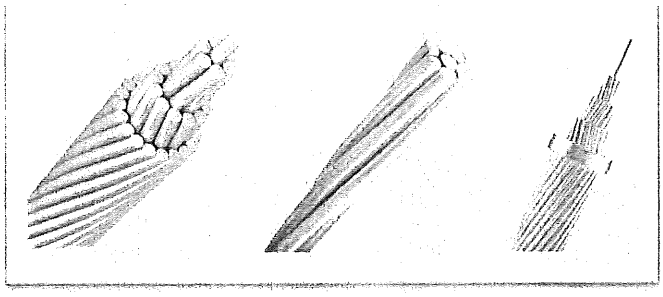

Figure 3

a) ACSR
b) AAAC
c) ACAR
d) AAC

17. Define (a) in Figure 4? (1 mark)

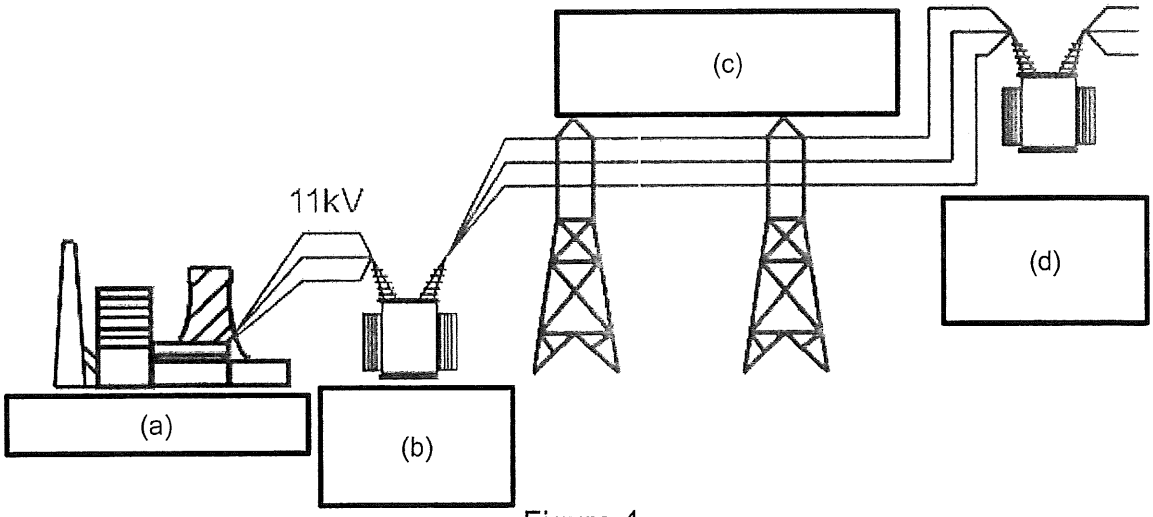

Figure 4

a) Transmission lines
b) Step down transformer
c) Step up transformer
d) Generating station

18. Define (b) in Figure 4? (1 mark)

a) Transmission lines
b) Step down transformer
c) Step up transformer
d) Generating station

19. Define (c) in Figure 4? (1 mark)

a) Transmission lines
b) Step down transformer
c) Step up transformer
d) Generating station

20. Define (d) in Figure 4? (1 mark)

a) Transmission lines
b) Step down transformer
c) Step up transformer
d) Generating station

21. Define (a) in Figure 5? (1 mark)

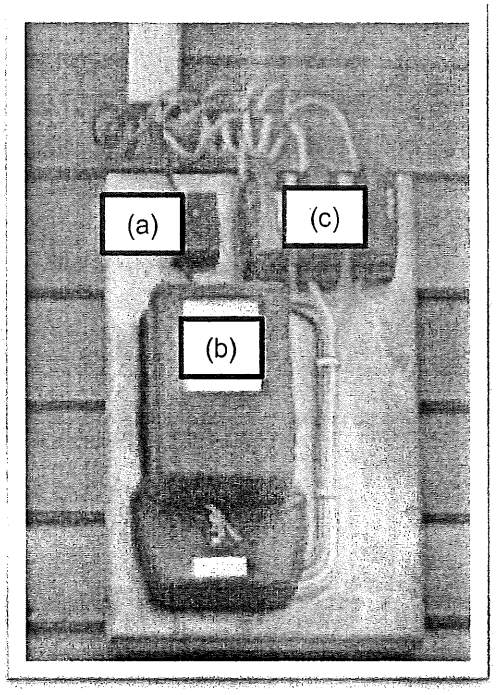

Figure 5

a) Service fuse
b) Neutral connector
c) Kilowatt-hour run
d) Connector

22. Define (b) in Figure 5? (1 mark)

a) Service fuse
b) Neutral connector
c) Kilowatt-hour run
d) Connector

23. Define (c) in Figure 5? (1 mark)

a) Service fuse
b) Neutral connector
c) Kilowatt-hour run
d) Connector

24. Define (a) in Figure 6? (1 mark)

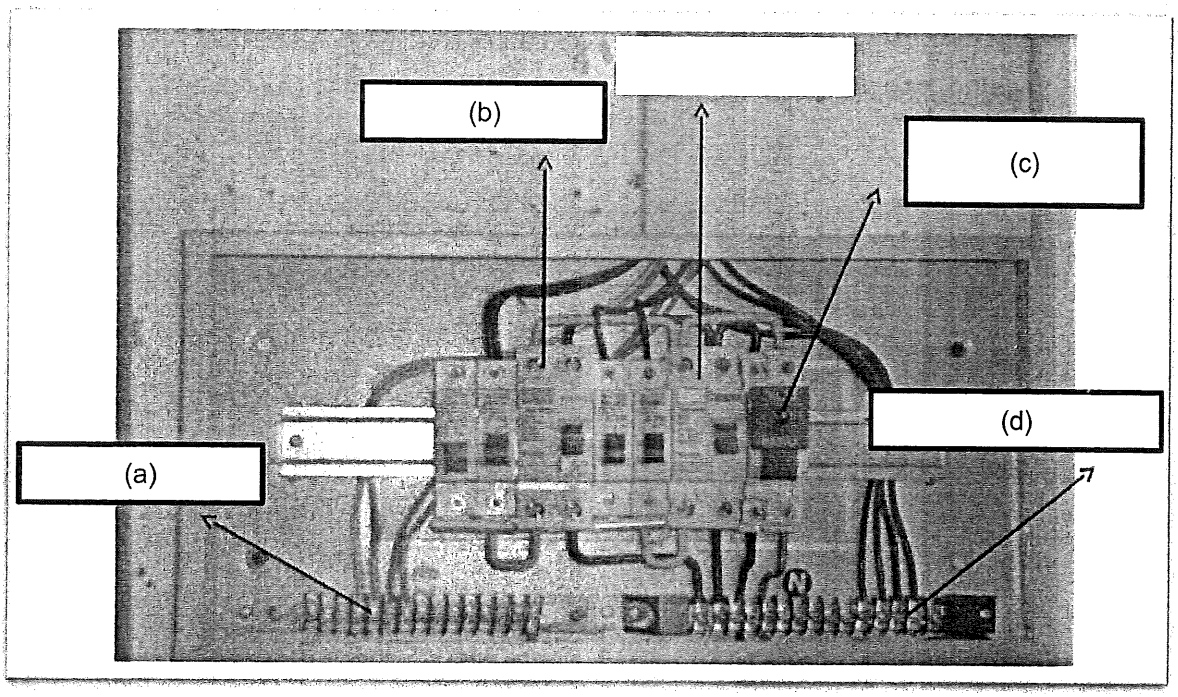

Figure 6

a) Neutral terminal
b) Earth terminal
c) Main switch
d) RCCD

25. Define (b) in Figure 6? (1 mark)
    a) Neutral terminal
    b) Earth terminal
    c) Main switch
    d) RCCD

26. Define (c) in Figure 6? (1 mark)
    a) Neutral terminal
    b) Earth terminal
    c) Main switch
    d) RCCD

27. Define (d) in Figure 6? (1 mark)
    a) Neutral terminal
    b) Earth terminal
    c) Main switch
    d) RCCD

28. An electrical appliance marked 150 W and supplied with a voltage of 240V. Calculate the electric current flowing through the device. (1 mark)
    a) 0.51 A
    b) 0.61 A
    c) 0.63 A
    d) 0.73 A

29. An electrical appliance has a power of 1kW used for 5 hours. Calculate the electricity consumed. (1 mark)
    a) 5 kWh
    b) 6 kWh
    c) 6.5 kWh
    d) 7 kWh

30. The tariff rate for electricity consumption in a residential house is shown below:

The first 100 units are	20 cents per unit
Next 200 unit	25 cents per unit
Additional units	28 sen per unit

Calculate the cost of electricity consumption of 500 units. (1 mark)

a) RM 120
b) RM 122
c) RM 125
d) RM 126