higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

RADIO AND TELEVISION THEORY N1

7 April 2020

This marking guideline consists of 5 pages.

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QUESTION 1

1.1 C
1.2 A
1.3 C
1.4 B
1.5 A

(5 × 1) **[5]**

QUESTION 2

2.1 False
2.2 False
2.3 True
2.4 False
2.5 True

(5 × 1) **[5]**

QUESTION 3

3.1 E
3.2 F
3.3 A
3.4 B
3.5 G
3.6 C
3.7 D
3.8 I
3.9 H
3.10 J

(10 × 1) **[10]**

QUESTION 4

4.1 $R_T = \frac{R_1 \times R_2}{R_1 + R_2} + R_3$ ✓

$= \frac{10 \times 15}{10 + 15} + 25$ ✓

$= 6 + 25$ ✓

$= 31\ \Omega$ ✓ (4)

4.2 $I_T = \frac{V_T}{R_T}$ ✓

$= \frac{30}{31}$ ✓

$= 0{,}968$ A ✓ (3)

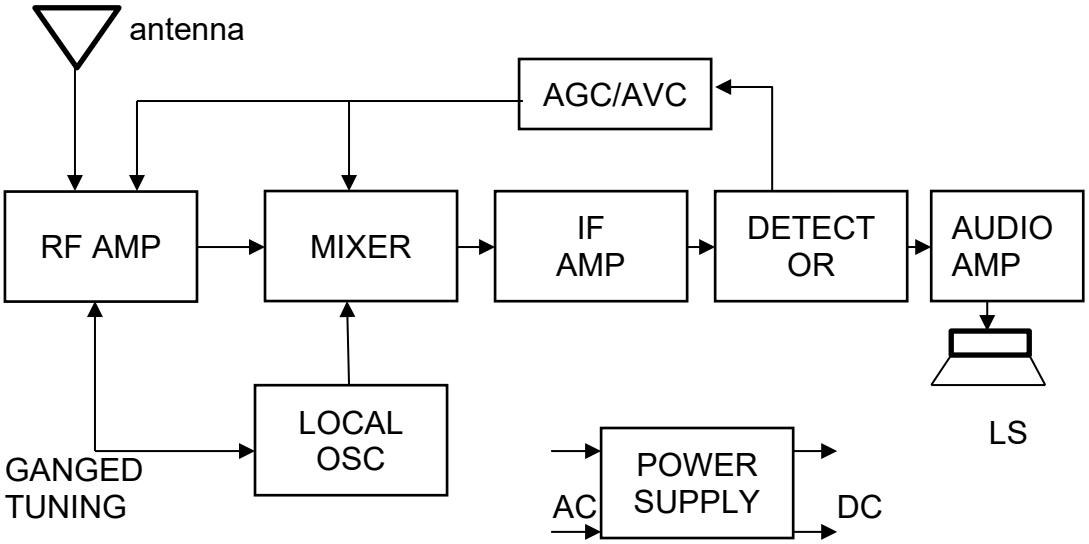
4.3 $V = I_T \times R_{25}$ ✓

$= 0{,}968 \times 25$ ✓

$= 24{,}2$ V ✓ (3)

[10]

QUESTION 5



[11]

QUESTION 6

6.1 Elements which easily allow the flow of current

6.2 Elements which are neither good nor bad conductors but fall in between.

6.3 Rate of doing work

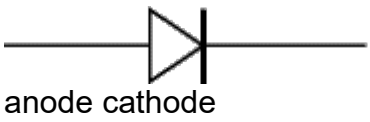
6.4 Materials not conducting electricity

6.5 Smallest particle of a compound, made up of atoms

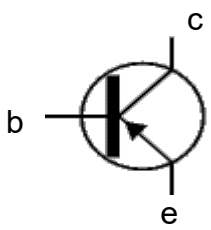
(5 × 2) **[10]**

QUESTION 7

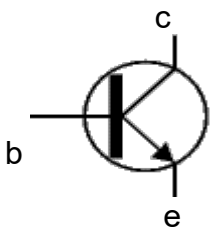
7.1 7.1.1



7.1.2

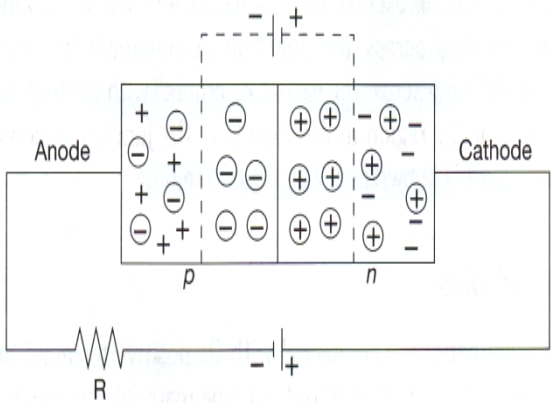


7.1.3



(3 × 2) (6)

7.2



(4)
[10]

QUESTION 8

8.1 Provides synchronising pulses to line and field oscillators

8.2 Provides 15 625 Hz for horizontal scanning of screen with electron beam

8.3 Demodulates carrier wave from modulated wave

8.4 Cuts off beam of picture tube during each line and field fly-back interval

8.5 Obtained when all three guns (red, green and blue) are driven to maximum output

(5 × 2) **[10]**

QUESTION 9

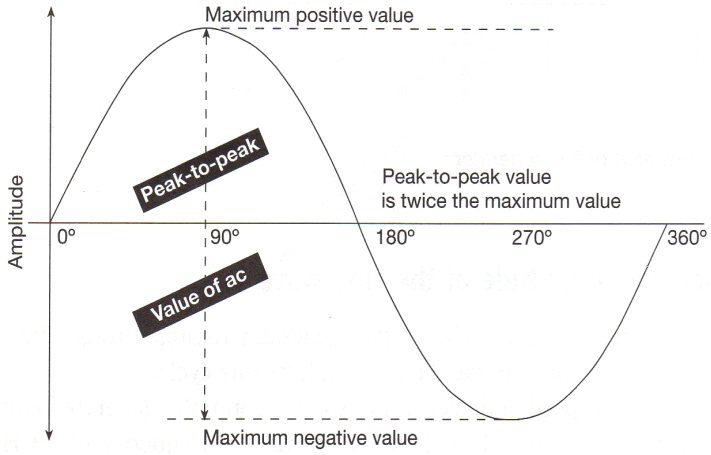
9.1
- Area of plates
- Distance between plates
- Type of dielectric material used between plates (3 × 2) (6)

9.2
- Type of material
- Length of wire
- Area of wire (3 × 2) (6)

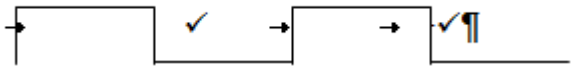
[12]

QUESTION 10

10.1 10.1.1



10.1.2



10.1.3



(3 × 2) (6)

10.2 10.2.1 The electric field of an aerial is parallel to the length of the aerial and the magnetic field is at right angle to it.

10.2.2 The reflected ground-level wave travels from the transmitting aerial to the earth and is reflected to the receiving aerial. It follows the curvature of the earth.

10.2.3 The reflected wave travels directly in an almost straight line from the transmitter to the receiver.

(3 × 2) (6)
[12]

QUESTION 11

11.1 Light-emitting diode
11.2 Liquid-crystal display
11.3 High-definition multimedia interface
11.4 High definition
11.5 Universal serial bus

(5 × 1) **[5]**

TOTAL: 100

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