



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE COMMUNICATION-ELECTRONICS N5

31 March 2020

This marking guideline consists of 6 pages.

QUESTION 1

- 1.1 True
- 1.2 True
- 1.3 False
- 1.4 True
- 1.5 True
- 1.6 True
- 1.7 False
- 1.8 False
- 1.9 True
- 1.10 True

(10 × 1) [10]

QUESTION 2

2.1 2.1.1 (a) $Z = R = \text{Minimum}$

(b) $X_L = X_C$

(c) Current = Maximum

(6)

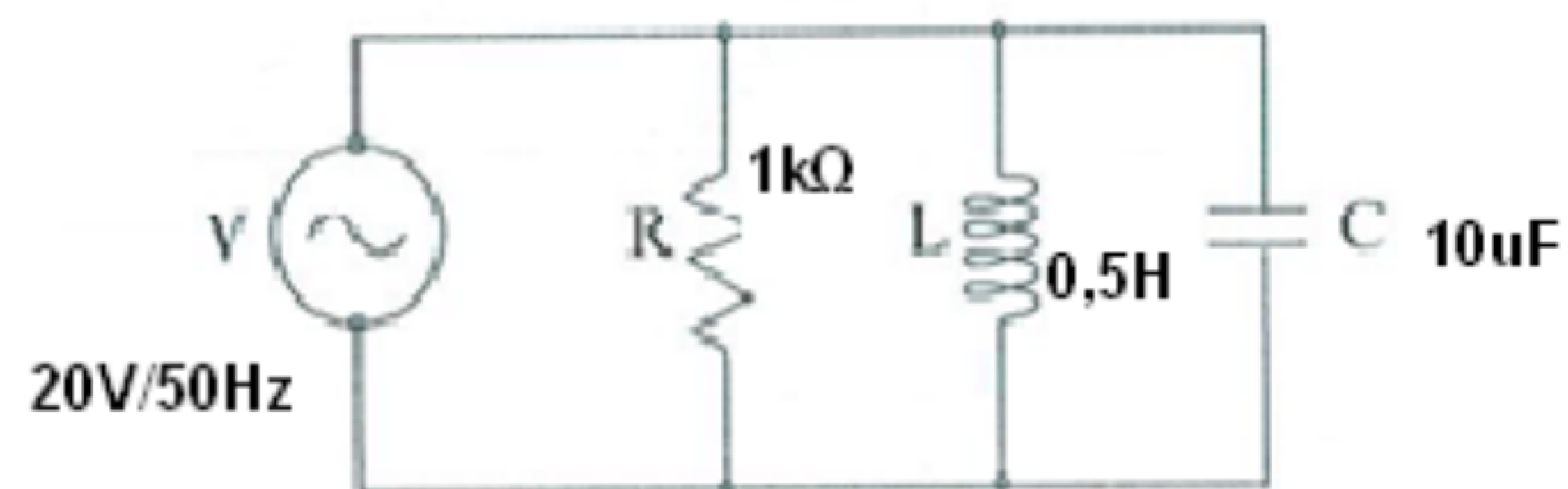
2.1.2 (a) $Z = L/RC = \text{Maximum}$

(b) $X_L = X_C$

(c) Current = Minimum

(6)

2.2 2.2.1



(2)

2.2.2 (a) $I_R = \frac{100}{100} \checkmark = 0,1 \text{ A} \checkmark$

$$I_L = \frac{V}{X_L}$$

$$= \frac{100}{2\pi \times 50 \times 0,5} \checkmark$$

$$= 0,673 \text{ A} \checkmark$$

$$I_C = \frac{V}{X_C}$$

$$= \frac{100 \times 2\pi \times 50 \times 10}{10^6} \checkmark$$

$$= 0,314 \text{ A} \checkmark$$

$$I_x = I_L - I_C$$

$$= 0,673 - 0,314 \checkmark$$

$$= 0,323 \text{ A} \checkmark$$

$$I_T = \sqrt{I_R^2 + I_x^2}$$

$$= \sqrt{0,1^2 + 0,323^2} \checkmark$$

$$= 0,338 \text{ A} \checkmark$$

(10)

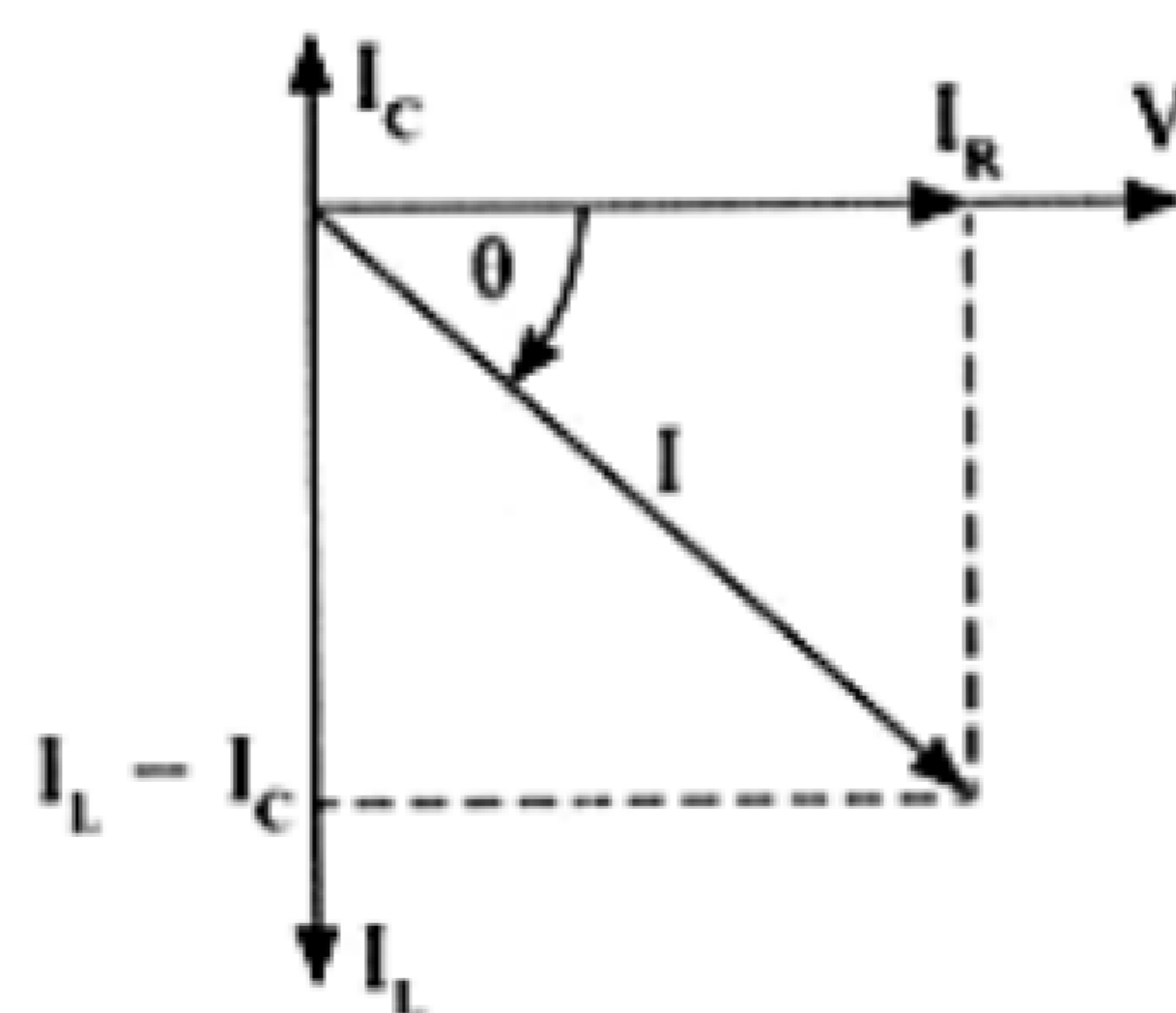
(b) $\theta = \tan^{-1} \frac{I_x}{I_R}$

$$= \tan^{-1} \frac{0,323}{0,1} \checkmark$$

$$= 72^{\circ}46' \checkmark$$

(2)

2.2.3



(2)
[28]