Page
Date

sheet 5

بسم الله الرحمن الرحيم

"Oscilloscopes"

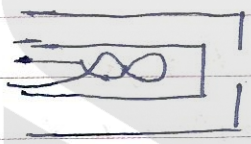
1- Name the four major sections of a general-purpose oscilloscope and list the common controls for each section.

- A- Display section
  - Controls
    - 1- Focus
    - 2- Intensity
- B- Vertical section
  - Controls
    - 1- Volt/Div
    - 2- Coupling switch
- C- Horizontal ~~controls~~ section
  - Controls
    - 1- Sec/Div
    - 2-
- D- Trigger Controls (section)
  - 1- Mode switch
  - 2- Source "
  - 3- trigger level
  - 4- Slope
  - 5- Coupling
  - 6- HolDoff

Page
Date

2- What element in the CRT controls the intensity of the beam?

- control grid



3- (a) Compute the deflection sensitivity for an electrostatic CRT in which the accelerating voltages is $V_a = 1000\ V$, $L = 24\ cm$, $d = 1.2\ cm$ and the length of the plates is 4.0 cm,

(b) what deflection voltage is required to deflect the beam 3 cm from the center of the CRT?

(a) الجواب في الصفحة 154

$$\frac{V_d}{D} = ?$$

$V_a = 1000V$, $L = 24cm$, $d = 1.2cm$, $l = 4cm$

$$\frac{V_d}{d} = \frac{2dV_a}{Ll} = \frac{2*1.2*1000}{2*4} = 25\ V/cm$$

(b) $V_d = ?$ $\quad D = 3cm$

$$V_d = 3*25 = 75V$$

Page
Date

4- An oscilloscope has a dc voltage connected to its input and the horizontal sweep is observed to move up 4.6 div when the input coupling switch is moved from its GND position to the DC position, if the vertical sensitivity is 0.5 V/Div, what dc voltage is being measured?

div = 4.6 divisions

* dc voltage voltage = divisions * $\frac{\text{Volt}}{\text{division}}$

= 4.6 * 0.5 = 2.3 V

5- An oscilloscope displays the waveform shown in Figure 6.23. The Sec/Div control is set to 20 μs/div and the horizontal 10 x magnifier is on, compute the period and frequency of the waveform.

$T = \left(\frac{\text{sec/div}}{10}\right)$ divisions $= \frac{20\ \mu s/\text{div}}{10} * 8.2\ \text{div}$

T = 16.4 ms

$F = \frac{1}{T} = \frac{1}{16.4\ s}$

Page
Date

5-

Delay = 6.55 - 2.81 = 3.74 division

T = 3.74 * 10 = 37.4 ms

دول بقى اللى شرحهم الباشمهندس عمر

واللى طالبين فيها فقط