



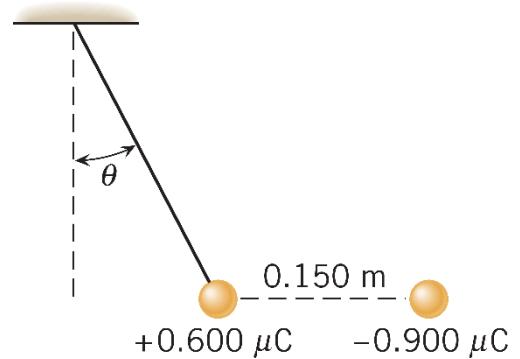
MINISTRY EDUCATION, CULTURE,  
RESEARCH AND TECHNOLOGY  
**UNIVERSITY COUNTRY JAKARTA**  
FACULTY MATHEMATICS AND KNOWLEDGE KNOWLEDGE  
NATURAL  
**PRODI PHYSICS & EDUCATION  
PHYSICS**  
Campus A UNJ Rawamangun, Gd. Hasjim Asj'arie Lt. 5  
Jl. Rawamangun Advance No. 1 Jakarta 13220  
Tel. 021-29266285/29266284

EXAM MIDDLE SEMESTER 118

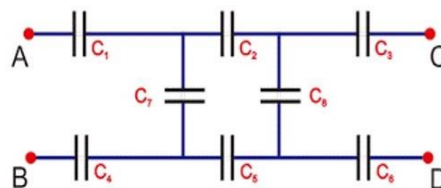
**PHYSICS BASE II**

Date and time	Monday, 27 March 2023
O'clock	08.00-09.40 WIB
Study Program	Physics And Education Physics
Characteristic Exam	Closed book
Lecturer	Prof. Dr. I Made Astra, M.ScDr. Umiatin, M.Si Dr. Hadi Nasbey, M.Sc

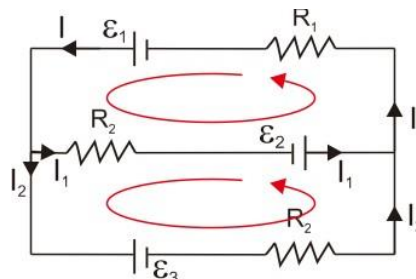
1. A insulator ball small with mass  $8.00 \times 10^{-2}$  kg And load electricity  $0.600 \mu\text{C}$  hanged with a thread wire Which mass can ignored. A load  $-0.900 \mu\text{C}$  is held  $0.150$  m from the spherical insulator small And appropriate in adjacent right, so that the wire forms an angle  $\theta$  with vertical (see picture). Find (a) angle  $\theta$  And (b) voltage wire.



2. Take note arrangement capacitor following : 3 capacitor on from left to right  $C_1 = 600 \mu\text{F}$ ,  $C_2 = 120 \mu\text{F}$ , and  $C_3 = 240 \mu\text{F}$ , 3 bottom capacitors from left to right  $C_4 = 200 \mu\text{F}$ ,  $C_5 = 240 \mu\text{F}$  and  $C_6 = 300 \mu\text{F}$  and the 2 middle ones  $C_7$  left =  $260 \mu\text{F}$  and right  $C_8 = 80 \mu\text{F}$  . If a voltage of  $100 \text{ V}$  is applied between A and B, calculate the charge stored in each capacitor and electrical energy stored in Suite.



3. Consider the following closed circuit. If the magnitude of  $E_1 = 16 \text{ V}$ ,  $E_2 = 8 \text{ V}$ ,  $E_3 = 10 \text{ V}$  and  $R_1 = 12 \text{ ohms}$ ,  $R_2 = 6 \text{ ohms}$ , and  $R_3 = 6 \text{ ohms}$ . Calculate the magnitude of  $I$ ,  $I_1$  and  $I_2$  And big energy electricity each minute on  $R_1$ .



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4. Two wire segments as shown in the figure, have a current  $i_1 = 0.4 \text{ A}$  flowing through them second wire (bottom) with a radius of 5 cm and an angle of  $180^\circ$ . On the first (top) wire segment carries current  $i_2 = 2 i_1$  and the arc part of the circle with finger – finger 4 cm as well as corner  $120^\circ$ . Second wire own center Which The sameat point P. Calculate the magnitude and direction of the magnetic field at P due to the two segments wire the.

