

UJIAN AKHIR SEMESTER GENAP 2010/2011 FMIPA UNY

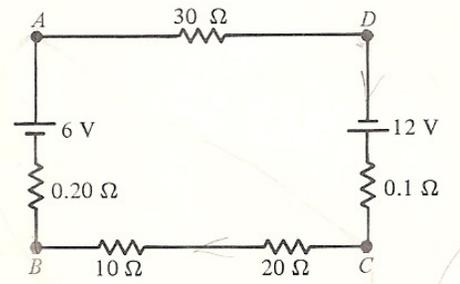
Mata Kuliah : Basic Physics II
Prodi /Sem : Pend IPA - Intl/ 2
Dosen : Drs. Joko Sudomo, MA.

Hari/Tgl : Selasa, 21/06/2011
Tempat : Lab IPA 2
Waktu : 13.00 – 14.30 (90 menit)

- A beam of rays travels from a liquid ($n = 1.60$) to air with an angle of incidence 10° .
 - What is the angle of refraction?
 - What should be the angle incidence (i) so that the angle of refraction is doubled ($2i$) ?
- There are 2 similar boys i.e. Aldi and Aldino. Aldi is 165 cm tall and able to lift up a load of 24 kg. The scale factor of Aldi compared to Aldino is 1.1. If Aldino has a mass of 40 kg:
 - what is the height of Aldino?
 - what is the mass of Aldi?
 - what is the load that Aldino able to lift up?
- A soldier standing on a valley between 2 parallel mountains A and B fires a gun and hears 2 echoes at interval of 1.5 s and 3 s. If the speed of sound in air is 340 m/s,
 - What is the distance of the 2 mountains?
 - What is the distance of the soldier to the mountain A?
 - What is the distance of the soldier to the mountain B?



- Sebuah elektron bergerak mendatar ke arah utara dengan kecepatan $1,5 \times 10^8$ m/s melewati medan magnet homogen yang arahnya ke barat berkekuatan $0,01$ weber/m².
 - Gambarkan arah orbit elektron !!!
 - Berapa jari-jari orbit elektron tsb?
 (massa elektron = $9,11 \times 10^{-31}$ kg;
 muatan elektron = $1,6 \times 10^{-19}$ C).



- Given an electrical circuit as shown in the accompanying figure, calculate:
 - the current flowing through the circuit.
 - the potential difference across AB.
 - the potential difference across BC.
- An old man use bifocal glasses to see distant objects through the upper half and to read from a distance of 25 cm through the lower half. The upper lenses have a power of $-0,5$ diopters and lower lenses $+2$ diopters.
 - What is the eyes defects of of this old man?
 - If he put off the glasses, how far objects that he is still able to see clearly?
 - If he put off the glasses, what is the closest objects that he can see clearly?