

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENGAJIAN TINGGI**

JABATAN KEJURUTERAAN ELEKTRIK

PENILAIAN ALTERNATIF

SESI 2: 2020/2021

BEU 60213 : MEDICAL IMAGING

NAMA PENYELARAS KURSUS: NURUL HUDA BINTI MOHAMD SALEH

KAEDAH PENILAIAN : PEPERIKSAAN ONLINE

JENIS PENILAIAN : SOALAN ESEI (2 SOALAN)

TARIKH PENILAIAN : 13 JULAI 2021

TEMPOH PENILAIAN : 2 JAM

LARANGAN TERHADAP PLAGIARISM (AKTA 174)

PELAJAR TIDAK BOLEH MEMPLAGIAT APA-APA IDEA, PENULISAN, DATA ATAU CIPTAAN ORANG LAIN. PLAGIAT ADALAH SALAH SATU PENYELEWENGAN AKADEMIK. SEKIRANYA PELAJAR DIBUKTIKAN MELAKUKAN PLAGIARISM, PENILAIAN BAGI KURSUS BERKENAAN AKAN DIMANSUHKAN DAN DIBERI GRED F DENGAN NILAI MATA 0.00. (RUJUK BUKU ARAHAN-ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN (Sarjana Muda) EDISI 2, 2020, KLAUSA 15&16)

SECTION A : 100 MARKS
BAHAGIAN A : 100 MARKAH

INSTRUCTION:

This section consists of **TWO (2)** essay questions. Answer **ALL** question. Write your answers in the answer sheet form provided.

ARAHAN :

Bahagian ini mengandungi DUA (2) soalan esei. Jawap SEMUA soalan. Tulis jawapan anda di dalam helaian kertas yang disediakan.

QUESTION 1

CLO1
C4

SOALAN 1

Man dies after being sucked into MRI scanner at Indian hospital
Man was carrying oxygen cylinder which was pulled by machine's magnetic force and then thought to have punctured

An Indian man died after being sucked into an MRI machine while visiting a relative at a hospital in Mumbai, police said Monday.

Rajesh Maru, 32, was yanked towards the machine by its magnetic force after he entered the room carrying an oxygen cylinder, the city's police said in a statement.

"We have arrested a doctor and another junior staff member under section 304 of the Indian penal code for causing death due to negligence," Mumbai police spokesman Deepak Deoraj told AFP.

The incident occurred on Saturday night at the Indian financial capital's Nair Hospital.

On January 27, 2018, Laxmi Solanki, a 65-year-old patient at Nair Hospital, was wheeled on an iron-steel trolley from the Medical Intensive Care Unit (MICU) to the Magnetic Resonance Imaging (MRI) unit.

The elderly patient was on oxygen support at the time. An MICU ward boy named Vitthal Chavan, Dr Saurabh Lanjrekar of the hospital's Department of Medicine, and the patient's relatives, Harish Solanki, Priyanka Solanki, Tribhuvan Solanki, and Rajesh Maru accompanied her.

At the Radiology Department (where the MRI facility is), Dr Siddhant Shah and an ayah, Sunita Surve, were present, but the ward boy of the Radiology department and the Radiology technician were not.

According to the family, this is what happened: Laxmi's iron trolley was wheeled into Zone III in violation of procedure, and the patient was then shifted to the special MRI trolley and taken to a room next to the room that has the MRI machine (Zone IV).

At the same time, Maru, who was holding the oxygen cylinder with his left hand, his fingers wrapped around the cylinder's nozzle, stepped through the door into Zone IV.

The next instant, Maru, still holding the cylinder, flew off his feet "like a missile" and slammed into the gantry of the machine a few feet away.

Police said preliminary reports suggested that the man had died from inhaling liquid oxygen that leaked from the cylinder.

It is thought the cylinder was damaged after hitting the machine.

Ramesh Bharmal, the dean of the hospital, told AFP that an investigation had been launched to determine the exact cause of death, adding CCTV footage of the incident had been handed over to police.

The victim's uncle said Maru had been asked to carry the cylinder by the junior staff member who assured him the machine was switched off.

"The ward boy who was supposed to prevent such incidents told my family members to go inside when the machine was turned on. We are shocked and devastated," Jitendra Maru told AFP.

The state government of Maharashtra, of which Mumbai is the capital, announced compensation of 500,000 rupees (\$7,870) for the victim's family.

MRI, or magnetic resonance imaging, machines use a powerful magnetic field to produce images of the body's organs. Objects containing ferrous metals are pulled towards it and must not be carried into the room.

SOURCE: <https://www.theguardian.com/world/2018/jan/30/mri-scanner-india-death>

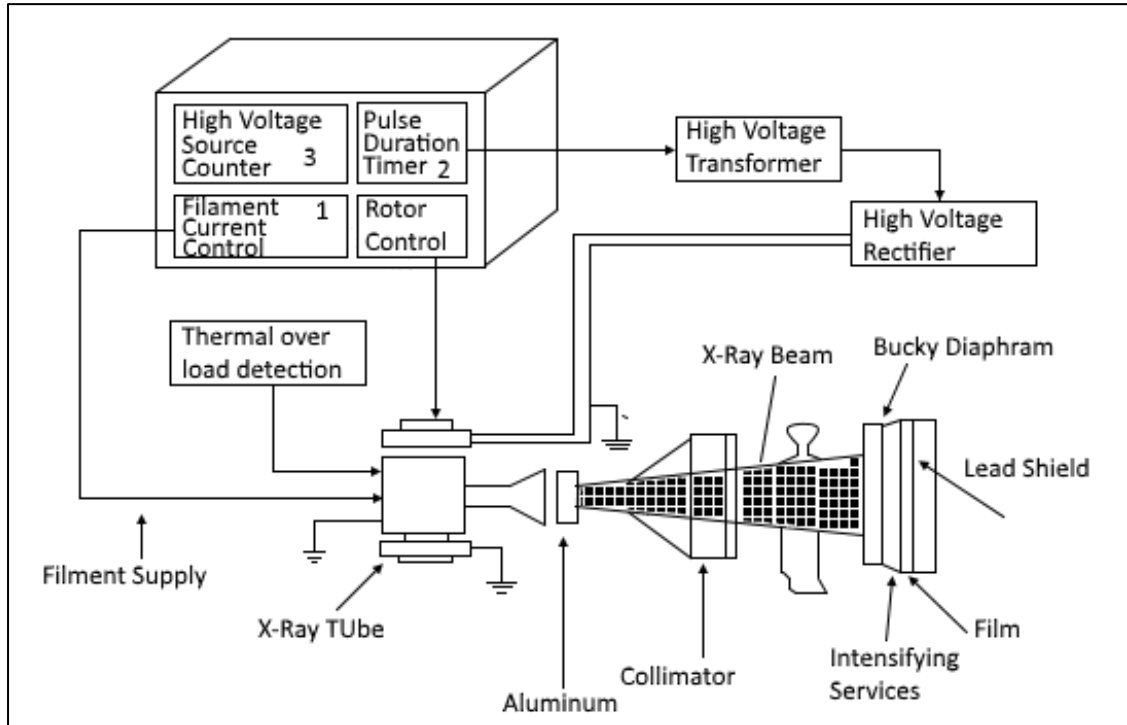
Figure 1/Rajah 1

Referring to the article (Figure 1), analysis of the causes of the accident that occurred based on the principles of MRI operation. In addition, figure out the safety measures that need to be implemented by employees and patients to prevent the accident from happening.

(50 marks)

Merujuk kepada artikel (Rajah 1), analisis punca-punca yang menyebabkan kemalangan itu berlaku berdasarkan prinsip-prinsip pengoperasian MRI. Selain itu, cari tahu langkah-langkah keselamatan yang perlu dilaksanakan oleh pekerja dan pesakit bagi mengelakkan kemalangan itu berlaku.

(50 markah)

CLO1
C4**QUESTION 2**
SOALAN 2**Figure 2 / Rajah 2**

Based on Figure 2, find the part that produces x-rays and discuss how the process of producing x-rays can produce internal images of human organs starting from the power supply until the image is displayed on film.

(50 marks)

Berdasarkan kepada rajah 2, cari bahagian yang menghasilkan sinaran x dan bincangkan bagaimana proses penghasilan sinaran x boleh menghasilkan imej organ dalaman manusia bermula dari bekalan kuasa sehingga imej dipaparkan di filem.

(50 markah)

SOALAN TAMAT