

Forum:Seminar papers/Biophysics/2. LF/2018-2019/Group 5/CDF

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RADIOACTIVITY:

1. Which medical imaging technique produces a 2-dimensional image?

- A. Scintigraphy
- B. SPECT
- C. PET
- D. All of the above

Correct Answer: A

2. Which of the following statements below is true?

- A. PET scans are more advantageous than SPECT because they require less tracer substance
- B. A collimator is used for SPECT to detect the amount of emitted protons
- C. SPECT and PET detect radiation from only above the patient meanwhile Scintigraphy detects it from circularly around the patient
- D. Gamma rays have not been used for tumor treatment

Correct Answer: A

3. A piece of radioactive material now has about 1 /16 of its previous activity. If the half-life is 4 hours the difference in time between measurements is approximately.

- A. 8 hours.
- B. 16 hours.
- C. 32 hours.
- D. 60 hours.

Correct Answer: B

4. Which group of tissues consists of highly radiosensitive tissues only

- A. bone marrow stem cells, spermatogonia, granulosa cells surrounding the ovum
- B. nerve cells, liver, granulosa cells surrounding the ovum
- C. liver, thyroid, connective tissue, vascular endothelium
- D. nerve cells, sense organs

Correct Answer: A

5. In gamma decay,

- A. The neutron splits causing dissipation of energy
- B. There is dissipation of excess energy by using photons spontaneously
- C. A neutron transmutes into a proton
- D. There is dissipation of excess energy by using photons non spontaneously

Correct Answer: B

AUDIOMETRY:

1. What is the most sensitive hearing range for the human auditory organ?

- A. 1-5 Hz
- B. 1-5 kHz
- C. 16 kHz- 20kHz
- D. 16 Hz- 20Hz

Correct Answer: B

2. Which of the following is the function of the auditory ossicles/bones?

- A. They are used for conduction of sound waves in the cochlea
- B. Nothing - they are rudimentary bones of the ear
- C. They are used for conduction of sound waves to the round window
- D. They are used for conduction of sound waves to the oval window

Correct Answer: D

3. Which of the following is true about sound and hearing?

- A. In the human ear we can only perceive sounds in the range of 60Hz to 15kHz
- B. Air conduction is when sound waves pass from the external ear to the middle ear
- C. Sound waves consist of longitudinal mechanical waves
- D. Bone conduction is transmission of sound waves through the skull directly into the middle ear

Correct Answer: C

4. Give one special feature of external ear; middle ear; & inner ear:

- A. External ear: characterised by hyaline cartilage; Middle ear: contains two muscles; Inner ear: The windows are made of an elastic membrane
- B. External ear: the auditory tube is a bended oval tube approximately 2.8 cm; Middle ear: hearing bones do not create a chain between the drum and the oval window; Inner ear: is made up of a petite labyrinth in the soft bone
- C. External ear: external auditory canal is another continuation of the auditory organ; Middle ear: composed of the drum, the cavity of the drum and auditory bones; Inner ear: the connection between the middle and the inner ear is realized by two windows
- D. External ear: the auditory tube consists of the outer-fiber and the inner-bone part; Middle ear: includes the Eustachian tube, which connects the inner cavity with the nasopharynx; Inner ear: has two parts -> the vestibular apparatus and the snail

Correct Answer: C

5. The stapes carries sound waves to what structure?

- A. The oval window of the inner ear.
- B. The Eustachian tube
- C. The Tympanic Membrane
- D. The Incus

Correct Answer: A