

CONTINUING EDUCATION TEST

Recent Advances in Radiopharmaceuticals

For each of the following questions, select the best answer. Then circle the number on the CE Tests Answer Sheet that corresponds to the answer you have selected. Keep a record of your responses so that you can compare them with the correct answers, which will be published in the next issue of the Journal. Answers to these test questions should be returned on the Answer Sheet no later than December 1, 1992. Supply your name, address, and VOICE number in the spaces provided on the Answer Sheet. Your VOICE number appears on the upper left hand corner of your Journal mailing label. No credit can be recorded without it. A 70% correct response rate is required to receive 0.1 CEU credit for this article. Members participating in the continuing education activity will receive documentation on their VOICE transcript, which is issued in March of each year. Nonmembers may request verification of their participation but do not receive transcripts.

A. Technetium in its metastable state was discovered in _____.

- 101. 1937
- 102. 1940
- 103. 1939
- 104. 1909

B. All of the following agents cross the intact blood-brain barrier except _____.

- 105. ^{99m}Tc -DTPA
- 106. ^{99m}Tc -HMPAO
- 107. ^{133}Xe
- 108. ^{123}I SPECTamine

C. The usefulness of nuclear medicine studies to diagnose dementia and stroke has greatly increased with the development of ^{99m}Tc -HMPAO and ^{123}I SPECTamine.

- 109. True
- 110. False

D. _____ is an agent designed to treat bone pain from skeletal metastases.

- 111. ^{87m}Sr
- 112. ^{99m}Tc -MDP
- 113. ^{89}Sr chloride
- 114. none of the above

E. Technetium-99m PNAO and ^{99m}Tc -HMPAO are very similar in that they are efficiently taken up and retained by the cerebrum.

- 115. True
- 116. False

F. All of the following are false statements about FDG except the statement that _____.

- 117. FDG has been approved by the FDA
- 118. FDG is an agent used in SPECT imaging
- 119. FDG is used clinically to measure tumor aggressiveness and focal epilepsy
- 120. FDG is a product of fission

G. CardioTec differs from Cardiolite in that _____.

- 121. it has a greater half-life in the heart
- 122. it is a myocardial perfusion agent
- 123. it is an isonitrile compound
- 124. it is extracted into the myocardium rapidly and is more sensitive to small changes in blood flow

H. Attempts to use iodinated contrast media with CT to measure perfusion have been successful to date.

- 125. True
- 126. False

I. _____, an agent comparable to _____, is currently being developed as a contrast medium for MRI.

- 127. Gd-DTPA, ^{99m}Tc -DTPA
- 128. [^{18}F]FDG, ^{99m}Tc -DTPA
- 129. Gd-DTPA, pertechnetate
- 130. [^{18}F]FDG, pertechnetate

J. The $^{82}\text{Sr}/^{82}\text{Rb}$ generator has allowed myocardial perfusion to be measured with PET without the expense of a cyclotron.

- 131. True
- 132. False

K. All of following are true about Cardiolite except that it _____.

- 133. is characterized as an isonitrile
- 134. has a half-life of greater than 12 hours in the myocardium
- 135. is a positively charged, lipid soluble, ^{99m}Tc complex
- 136. is more characteristic of xenon than of thallium

L. *The distribution of ^{123}I SPECT-amine immediately after injection is flow related, but the immediate uptake and later distribution are dependent on amine uptake processes.*

137. True

138. False

M. *The following is an (are) important consideration(s) for an agent(s) chosen for radionuclide therapy.*

139. physical half-life

140. biological half-life

141. the energy of the beta particle

142. all of the above

143. 140 and 141 only

144. 139 and 141 only