

CONTINUING EDUCATION TEST #1

Nuclear Cardiology, Part II

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. Complete the answer sheet. 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 *JNMT*. Answers to these test questions should be returned on the Answer Sheet no later than **August 15, 1998**. An 80% correct response rate is required to receive 1.0 CEH (Continuing Education Hour) credit for each article. SNM Technologist Section members can find their VOICE number on the upper left-hand corner of their *JNMT* mailing labels. If you've joined our Nonmember VOICE Tracking Program, please write **NMVTP** on the Answer Sheet (no extra fee is required). Documentation will appear on your VOICE transcript. Nonmembers who have not joined our Nonmember VOICE Tracking Program must mail a \$10.00 check or money order, made payable to SNM, for each completed quiz. You will receive a certificate of completion indicating credit awarded for receiving a passing score of 80% or better.

A. The first-pass technique for radionuclide left ventriculography uses which of the following radiopharmaceuticals?

- 101. ^{99m}Tc -DTPA
- 102. ^{99m}Tc macroaggregates
- 103. ^{99m}Tc red blood cells
- 104. 101 and 103
- 105. 101, 102 and 103

B. The target-to-background ratio is equivalent regardless of the radiopharmaceutical(s) used for radionuclide left ventriculography.

- 106. true
- 107. false

C. Which collimator is recommended for first-pass studies?

- 108. high-sensitivity collimator
- 109. high-resolution collimator
- 110. pinhole collimator

D. Which view corresponds to or is close to the best septal view in most patients?

- 111. anterior
- 112. 45° LAO
- 113. 45° LPO
- 114. 15° RAO
- 115. 30° RAO

E. Fast acquisition of 30 images/sec, as required for first-pass studies, is called list mode acquisition.

- 116. true
- 117. false

F. For tomographic ERNA, 32 frames/heart cycle are commonly used.

- 118. true
- 119. false

G. For exercise RNA, the work load is increased by 25- to 30-watt increments about every _____.

- 120. 30 sec
- 121. 1 min
- 122. 5 min

H. Temporal smoothing averages each pixel for _____.

- 123. the same pixel of different frames of the time series
- 124. the surrounding pixels in the same frame
- 125. both 123 and 124

I. Functional images are useful in delineating ventricular edges for end-diastolic images.

- 126. true
- 127. false

J. Background subtraction is always mandatory for left ventricular ejection fraction calculation.

- 128. true
- 129. false

K. An aneurysm is easily detected due to the delayed contraction on the phase image.

- 130. true
- 131. false

L. The advantage of ^{81m}Kr is that it can be used for the right ventricle and the left ventricle.

- 132. true
- 133. false

M. An increase in the LVEF of less than 5% at peak exercise is observed in _____.

- 134. elderly patients
- 135. individuals with high resting ejection fraction
- 136. undertrained woman
- 137. 134 and 136
- 138. 135 and 136
- 139. 134, 135 and 136

N. An LVEF value of 45% after a myocardial infarction is a strong predictor of poor outcome.

- 140. true
- 141. false

CONTINUING EDUCATION TEST #2

Radiopharmaceuticals for Bone Malignancy Therapy

O. Which of the following isotopes were investigated in the 1940s for the treatment of metastatic cancer to bone?

- 142. ^{32}P and ^{89}Sr
- 143. ^{89}Sr and ^{153}Sm
- 144. ^{153}Sm and ^{188}Re
- 145. ^{188}Re and $^{117\text{m}}\text{Sn}$
- 146. $^{117\text{m}}\text{Sn}$ and ^{32}P

R. Which of the following radiopharmaceuticals are still under investigation?

- 157. ^{32}P , ^{89}Sr and ^{153}Sm
- 158. ^{89}Sr and ^{32}P
- 159. ^{89}Sr , ^{153}Sm and ^{188}Re
- 160. ^{188}Re and $^{117\text{m}}\text{Sn}$
- 161. ^{188}Re , $^{117\text{m}}\text{Sn}$ and ^{32}P

V. Tumor regression can occur following radionuclide therapy.

- 174. true
- 175. false

P. Which of the following isotopes have highly energetic beta emissions?

- 147. ^{32}P and ^{89}Sr
- 148. ^{89}Sr and ^{153}Sm
- 149. ^{153}Sm and ^{188}Re
- 150. ^{188}Re and $^{117\text{m}}\text{Sn}$
- 151. $^{117\text{m}}\text{Sn}$ and ^{32}P

S. Why is it easier to administer repeated doses of ^{153}Sm EDTMP?

- 162. ^{153}Sm is inexpensive.
- 163. The long physical half-life of ^{153}Sm .
- 164. ^{153}Sm has a long shelf life.
- 165. The short physical half-life of ^{153}Sm .
- 166. Both 164 and 165 are correct.

W. Treatment of earlier disease is more successful than treatment of more advanced disease.

- 176. true
- 177. false

T. Approximately what percent of patients experience some pain relief following radionuclide therapy for palliation from metastases to bone?

- 167. 100%
- 168. 75%
- 169. 35%
- 170. 25%
- 171. 10%

X. Which of the following isotopes has the longest physical half-life?

- 178. ^{32}P
- 179. ^{89}Sr
- 180. $^{117\text{m}}\text{Sn}$
- 181. ^{153}Sm
- 182. ^{186}Re

Q. Which of the following radiopharmaceuticals have been approved by the FDA?

- 152. ^{32}P , ^{89}Sr and ^{153}Sm
- 153. ^{89}Sr and ^{32}P
- 154. ^{89}Sr , ^{153}Sm and ^{188}Re
- 155. $^{117\text{m}}\text{Sn}$ and ^{32}P
- 156. ^{188}Re , $^{117\text{m}}\text{Sn}$ and ^{32}P

U. In order to provide pain palliation in advanced metastases to bone, the highest possible doses must be administered to the patient.

- 172. true
- 173. false

Y. Which of the following isotopes has the highest gamma energy?

- 183. ^{32}P
- 184. ^{89}Sr
- 185. $^{117\text{m}}\text{Sn}$
- 186. ^{153}Sm
- 187. ^{186}Re

Answers to CE Article Test #1, March 1998

The continuing education article "Nuclear Cardiology, Part I" by Mesotten, et al. was accompanied by a CE test. The correct answers are as follows.

- | | | | | |
|--------|--------|--------|--------|--------|
| A. 103 | D. 112 | G. 119 | J. 126 | M. 135 |
| B. 107 | E. 115 | H. 122 | K. 128 | N. 137 |
| C. 109 | F. 118 | I. 123 | L. 130 | |

Answers to CE Article Test #2, March 1998

The continuing education article "Scintillation Camera Quality Control, Part I" by Smith was accompanied by a CE test. The correct answers are as follows.

- | | | | | | |
|--------|--------|--------|--------|--------|--------|
| O. 140 | Q. 149 | S. 155 | U. 164 | W. 171 | Y. 179 |
| P. 143 | R. 151 | T. 159 | V. 167 | X. 177 | Z. 185 |

**Nonmembers
\$10 Fee per Test**

CONTINUING EDUCATION TESTS #1 AND #2

Answer Sheet

101	111	121	131	141	151	161	171	181	191	201	211	221	231	241
102	112	122	132	142	152	162	172	182	192	202	212	222	232	242
103	113	123	133	143	153	163	173	183	193	203	213	223	233	243
104	114	124	134	144	154	164	174	184	194	204	214	224	234	244
105	115	125	135	145	155	165	175	185	195	205	215	225	235	245
106	116	126	136	146	156	166	176	186	196	206	216	226	236	246
107	117	127	137	147	157	167	177	187	197	207	217	227	237	247
108	118	128	138	148	158	168	178	188	198	208	218	228	238	248
109	119	129	139	149	159	169	179	189	199	209	219	229	239	249
110	120	130	140	150	160	170	180	190	200	210	220	230	240	250

Name _____ Title _____

Hospital or Facility _____ Dept. _____

Street Address _____

City _____ State _____ Zip _____ Phone _____

VOICE/Membership No. _____ Or Check: Nonmember—check for \$10 per test enclosed

Today's Date _____

Return a copy of this answer sheet no later than **August 15, 1998** to:
 Continuing Education Coordinator, *Journal of Nuclear Medicine Technology*
 Marcia Ferg, The Society of Nuclear Medicine, 1850 Samuel Morse Dr., Reston, VA 20190.
 FAX: 703-708-9015.