TEST: PET RADIOPHARMACEUTICALS

1. PET stands for:

a. Positive Effective Therapy  
b. Post Endocardial Therapy  
c. Positron Effective Tomography  
d. Proton Emission Tomography  
e. None of the above

2. Which ONE of the following statements is False?

a. PET is better at determining organ function and CT is better at anatomy  
b. PET can identify a functional change in an internal organ before other modalities can determine a structural change  
c. PET can localize primary tumors but has no value in identifying metastatic disease  
d. PET can differentiate between malignancy and radiation necrosis

3. Which one of the following isotopes can NOT be used for coincidence imaging?

a. O-15  
b. Co-57  
c. N-13  
d. C-11

4. The half-life of F-18 is

a. 18 min  
b. 118 min  
c. 110 min  
d. 2.05 min

5. Which ONE of the following statements is False?

a. Injection of PET radiopharmaceuticals generally produces only mild side-effects.  
b. Radiation exposure from a PET imaging procedure is comparable to other commonly performed procedures.  
c. The PET pharmaceutical must not alter the process that it is trying to image.  
d. PET pharmaceuticals are usually chemically analogous to naturally occurring compounds.
6. The most commonly used PET radiopharmaceutical worldwide is

   a. F-18 Na fluoride  
   b. C-11 labeled CO₂  
   c. O-15 H₂O  
   d. N-13 ammonia  
   e. None of the above

7. Which ONE of the following is true?

   a. The chemical structural formulas for FDG and glucose both have a closed ring structure  
   b. The only F-18 compound ever synthesized is FDG  
   c. There are significant reimbursement issues associated with clinical use of F-18 FDG  
   d. FDG imaging is not valuable for avoiding unnecessary surgeries

8. Which ONE of the following statements is true?

   a. Since the energy of the photons emitted by F-18 is 511 keV, radiation-shielding requirements are almost identical to those associated with Tc-99m.  
   b. The mechanism of localization of FDG in malignant tumors is called "receptor binding";  
   c. The metabolic rate of most tumors is higher than that of normal tissue  
   d. The FDG taken up by tumors is metabolized almost as rapidly as it is taken up

9. Which of the following series contains ONLY positron emitters?

   a. Rb-82, F-18, Co-57  
   b. C-11, N-13, Rb-82  
   c. N-13, F-18, Co-57  
   d. I-123, I-125, I-131

10. Which ONE of the following oncologic indications has NOT been approved by Medicare for reimbursement?

    a. Lymphoma  
    b. Ovarian Carcinoma  
    c. Melanoma  
    d. Colorectal Cancer  
    e. Non-small cell lung cancer