Write short notes on:

1. a) Principle and application of PET scan in Oncology. (2+3) + 5
   b) Its current status based on evidence in literature for radiation
treatment planning of lung cancer.

2. a) Process of treatment planning with electrons. 6+4
   b) Enumerate the sites where it is regularly used, if available.

3. a) Enumerate the various acceptance tests done before
    commissioning a linear accelerator for patient treatment. 5+5
   b) Limits and tests for determining beam flatness and beam
       symmetry.

4. a) Define GTV, CTV, ITV & PTV. 4+6
   b) Enumerate the salient features of ICRU 50 and 62.

5. a) What is Stereotactic Body Radiotherapy (SBRT)? 3+7
   b) Enumerate the sites in which SBRT has a role and why?

6. a) What is dose volume histogram (DVH)? 2+3+1+4
   b) How is it computed?
   c) What are its pitfalls?
   d) Give one example of how you would interpret/utilize DVH.

7. a) What is gating in radiotherapy? 3+7
   b) Where is it used and how?

8. a) What is Adaptive Radiotherapy? 3+3+4
   b) In which sites has it been used?
   c) What are its problems and limitations?

9. a) What is the radiobiological basis of hypofractionated RT (HFRT)? 4+6
   b) Enumerate the sites in which HFRT is being used along with its
      evidence.

10. a) Enumerate the emergencies in oncology. 2+(2+2+2+2)
    b) Indications, dose schedules technique and results of radiation
       therapy for spinal cord compression treatment in malignancy.