

RET/13/Test B

661

**Radiotherapy &
Radiation Medicine**

Question Booklet No.

(To be filled up by the candidate by **blue/black ball-point pen**)

Roll No.

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Roll No. (Write the digits in words)

Serial No. of OMR Answer Sheet

Day and Date

(Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

(Use only **blue/black ball-point pen** in the space above and on both sides of the **Answer Sheet**)

1. Within 10 minutes of the issue of the Question Booklet, Please ensure that you have got the correct booklet and it contains all the pages in correct sequence and no page/question is missing. In case of faulty Question Booklet, bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope.*
3. *A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided.*
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. *On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.*
6. *No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR sheet No. on the Question Booklet.*
7. *Any changes in the aforesaid-entries is to be verified by the invigilator, otherwise it will be taken as unfair means.*
8. *This Booklet contains 40 multiple choice questions followed by 10 short answer questions. For each MCQ, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet. For answering any five short Answer Questions use five Blank pages attached at the end of this Question Booklet.*
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).*
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit *both OMR Answer Sheet and Question Booklet* at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

Total No. of Printed Pages : 15

FOR ROUGH WORK

1. 100

2. 100

3. 100

4. 100

5. 100

6. 100

7. 100

8. 100

Research Entrance Test – 2013

No. of Questions : 50

Time : 2 Hours

Full Marks : 200

Note : (i) This Question Booklet contains **40** Multiple Choice Questions followed by **10** Short Answer Questions.

(ii) Attempt as many MCQs as you can. Each MCQ carries **3 (Three)** marks. **1 (One)** mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question. If more than **one** alternative answers of MCQs seem to be approximate to the correct answer, choose the closest one.

(iii) Answer only **5** Short Answer Questions. Each question carries **16 (Sixteen)** marks and should be answered in **150-200** words. Blank **5 (Five)** pages attached with this booklet shall only be used for the purpose. Answer each question on separate page, after writing Question No.

1. The process of copying genetic information from DNA to RNA is known as
 - (1) Translation
 - (2) Replication
 - (3) Transcription
 - (4) Ligation
2. Separation and isolation of DNA is carried by
 - (1) Gel electrophoresis
 - (2) Polymerase chain reaction
 - (3) Bioreactors
 - (4) Cloning vectors
3. Which is not a sexually transmitted disease
 - (1) HIV
 - (2) Hepatitis B
 - (3) Listeriosis
 - (4) Chlamydiasis
4. Barr body is an
 - (1) Autosome
 - (2) X chromosome
 - (3) Y chromosome
 - (4) Mutated chromosome
5. Which is not a connective tissue
 - (1) Bone
 - (2) Cartilage
 - (3) Adipose tissue
 - (4) Muscular tissue
6. Antibodies are responsible for
 - (1) Cell mediated immunity
 - (2) Humoral immunity
 - (3) Innate immunity
 - (4) Autoimmunity
7. Hair is made of
 - (1) Elastin
 - (2) Fibrin
 - (3) Keratin
 - (4) Reticulin
8. Sympathetic nervous system has
 - (1) Craniosacral flow
 - (2) Cerebrocortical flow
 - (3) Thoracolumbar flow
 - (4) Diencephalic flow
9. Microglial cells are present in
 - (1) Liver
 - (2) Kidney
 - (3) Spleen
 - (4) Brain

10. Mitral valve is present between
- (1) Left ventricle and aorta
 - (2) Right ventricle and pulmonary trunk
 - (3) Left atrium and left ventricle
 - (4) Right atrium and right ventricle
11. Cell cycle have :
- (1) No phase
 - (2) Two phases
 - (3) Three phases
 - (4) Four Phases
12. Mitosis is the cell division occurs in :
- (1) Somatic cells
 - (2) Genetic cells
 - (3) Both of them
 - (4) None of them
13. Odd man out :
- (1) Tobacco
 - (2) HPV
 - (3) Smoke
 - (4) Vitamin C
14. Radiation is a :
- (1) Magnetic wave
 - (2) Electrical wave
 - (3) Electro-Magnetic wave
 - (4) None of them
15. Teletherapy is a :
- (1) Near distance treatment
 - (2) Far distance treatment
 - (3) Both of the above
 - (4) None of the above
16. Brachytherapy is a :
- (1) Near distance treatment
 - (2) Far distance treatment
 - (3) Both of the above
 - (4) None of the above
17. Totipotent cell can produce ?
- (1) Surface epithelial cells
 - (2) Fibroblasts
 - (3) Any type of cells
 - (4) None of the above

18. Radioactivity discovered by :
- | | |
|-----------------|--------------|
| (1) Madam Curie | (2) Roentgen |
| (3) Becquerel | (4) Hertz |
19. Roentgen (R) is an amount of :
- | | |
|---------------------------|-----------------------|
| (1) Alfa rays | (2) Beta rays |
| (3) X-Rays and Gamma rays | (4) None of the above |
20. Which Radiation source is not used now a days :
- | | |
|-------------|------------|
| (1) Co-60 | (2) Cs-137 |
| (3) Ra -226 | (4) Ir-192 |
21. Radiotherapy is a treatment of choice for :
- (1) Nasopharyngeal carcinoma T3N1
 - (2) Supra glottic Ca T3N0
 - (3) Glottic Ca T3N1
 - (4) Subglottic Ca T3N0
22. Which of the following malignant tumour is radioresistant :
- | | |
|-------------------|--------------------|
| (1) Ewings Sacoma | (2) Retinoblastoma |
| (3) Osteosarcoma | (4) Neuroblastoma |
23. All can be used for in-situ ablation of liver metastasis, *except* :
- | | |
|----------------------|--------------------------|
| (1) Ultrasonic waves | (2) Cryotherapy |
| (3) Alcohol | (4) Radiofrequency waves |
24. All of them use non-ionizing radiation, *except* :
- | | |
|---------------------|------------------|
| (1) Ultrasonography | (2) Thermography |
| (3) MRI | (4) Radiography |
25. Young female 30 years old had mantle radiotherapy in her teens, the most likely cancer site in her now :
- | | |
|-----------------|------------|
| (1) Thyroid | (2) Breast |
| (3) Bone marrow | (4) Lung |

26. Regarding cell kinetics of cancer, all are true *except* :
- (1) 1 cm tumour = 10^9 cells
 - (2) Intrinsic mutation rate in common cancer $\sim 10^6$ cells
 - (3) Common cancer have doubling time of 20 days
 - (4) Cells in G0 are highly sensitive to chemotherapy
27. Expansile secondary deposit is commonly found in :
- (1) Secondary from renal cell carcinoma
 - (2) Secondary from prostate
 - (3) Secondary from gut
 - (4) Pancoast tumour
28. Annual radiation dose limit for general public is :
- (1) 0.2 mSv
 - (2) 1.0 mSv
 - (3) 0.8 mSv
 - (4) 0.9 mSv
29. The procedure to be avoided in a haemangioma of the liver is :
- (1) Needle biopsy
 - (2) CT scan
 - (3) Ultrasonography
 - (4) Hepatic angiography
30. The incidence of seminoma in tumours of testes is :
- | | |
|---------|---------|
| (1) 60% | (2) 40% |
| (3) 30% | (4) 25% |

31. Which of the following is *not true* for Warthin tumour ?
- (1) Accounts for 15% of all salivary gland neoplasms
 - (2) It is a disease of elderly
 - (3) It is bilateral/multicentric in 10% of cases
 - (4) It undergoes malignant change
32. The preferred mode of palliative treatment in a patient with tracheoesophageal fistula due to advanced oesophageal malignancy is :
- (1) Surgery
 - (2) Gastrostomy
 - (3) Oesophageal stenting
 - (4) Radiotherapy only
33. Renal cell carcinoma may present with all of the following *except* :
- | | |
|---------------------------|---------------------------|
| (1) Nephrotic syndrome | (2) Pathological fracture |
| (3) Chronic renal failure | (4) Metastasis to thyroid |
34. Gamma rays have :
- | | |
|-------------------------|-----------------------|
| (1) Continuous spectrum | (2) Line spectrum |
| (3) Both (1) & (2) | (4) None of the above |
35.is artificially produced in nuclear reactor :
- | | |
|-----------|------------|
| (1) U-238 | (2) Ra-226 |
| (3) Co-60 | (4) Rn-222 |
36. 1.0 Ci =.....dps :
- | | |
|---------------------------|-------------------------|
| (1) 3.7×10^{10} | (2) 37×10^{10} |
| (3) 0.37×10^{10} | (4) 1.0 |
37. X-ray target in Linear accelerator is :
- | | |
|------------------|----------------|
| (1) Oil cooled | (2) Air cooled |
| (3) Water cooled | (4) Ice |

38. Full form of DICOM is :

- (1) Digital Imaging and Communications in Medicine
- (2) Digital Image Communications in Medicine
- (3) Digital Imaging and Computer in Medicine
- (4) Digital Imaging Computer for Medicine

39. Therapy dosimeter works on the principle of :

- | | |
|-----------------|--------------------------|
| (1) GM counter | (2) Proportional counter |
| (3) Ion chamber | (4) None of the above |

40. Radioisotope used in the treatment of thyroid is :

- | | |
|------------|-----------|
| (1) I-125 | (2) I-131 |
| (3) Tc-99m | (4) P-32 |

Attempt any five questions. Write answer in 150-200 words. Each question carries 16 marks. Answer each question on separate page, after writing Question Number.

1. Write about atom and radioactivity.
2. Write about Linear Accelerator.
3. Write about X & Gamma rays.
4. Discuss in brief about the Prevention of cancer.
5. In your opinion what policy should be adopted by National Cancer Control program (NCCP) in nation wide cancer management ?
6. Describe the process of Apoptosis.
7. How Radiation causes and cures cancer ?
8. Phase-3 clinical trial.
9. Evidence based treatment in cancer.
10. Psychology and cancer.

Roll No. :

Q. No. :

Roll No. :

Q. No. :

Roll No. :

Q. No. :

Roll No. :

Q. No. :

Roll No. :

Q. No. :

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