

PAKISTAN INSTITUTE OF ENGINEERING AND APPLIED SCIENCES  
P.O. Nilore, Islamabad

Subject: **THE WRITTEN TEST FOR MSc NUCLEAR MEDICINE / RADIATION AND MEDICAL ONCOLOGY**

This test is an aptitude examination designed to test your general intelligence and basic understanding. The background knowledge that you are expected to have should be quite adequate. In fact 30% of the questions can be answered with the basic knowledge of Arithmetic, Physics and Chemistry at Matric / F.Sc. level, while the remaining 70% question will be from general medicine and surgery. **The use of calculator will not be allowed.**

WRITING TABLES MAY NOT BE AVAILABLE DURING THE WRITTEN TEST. THEREFORE, ALL CANDIDATES ARE ADVISED TO BRING THEIR OWN WRITING CLIPBOARDS WITH THEM FOR THEIR USE DURING THE WRITTEN TEST.

The instruction sheet that will accompany the written test is attached with this note. Read these instructions carefully now to save time during the examination. In order to give an idea of the written test, a sample test paper has also been provided. These questions have been answered on the answer sheet provided at the end.

**Registrar, PIEAS**

**PAKISTAN INSTITUTE OF ENGINEERING AND APPLIED SCIENCES**

P. O. Nilore, Islamabad

**SAMPLE TEST**

**MSc NUCLEAR MEDICINE / RADIATION AND MEDICAL ONCOLOGY**

Time Allowed: **3 Hours**

ROLL NO: \_\_\_\_\_

SERIAL NO: \_\_\_\_\_

NAME: \_\_\_\_\_

EXAM CITY: \_\_\_\_\_

(Use BLOCK Letters)

SIGNATURE: \_\_\_\_\_

**READ THE FOLLOWING INSTRUCTIONS CAREFULLY**  
**BEFORE ATTEMPTING ANY QUESTION**

1. Make sure that the question book given to you contains 100 questions in all (70 in Part-I and 30 in Part-II) and there are total **8** pages including the instruction sheet. The answer sheet page is not included.
2. Check to see if you are provided with answer sheet consisting of **ONE** page only.
3. WRITE YOUR NAME AND ROLL NO. ON THIS PAGE AND ALSO ON THE ANSWER SHEET.
4. To write your answers, separate the answer sheet from the question book. After the test is over, put the answer sheet inside the question book and return it to the examiner.
5. On your answer sheet for each question there are FOUR choices (i.e. A,B,C,D). Fill the appropriate choice only with the **black marker**. You must not either overwrite or fill multiple choices.
6. **Each correct answer will carry THREE marks and ONE mark will be deducted for each incorrect answer.**
7. You are not expected to complete the paper in the specified time but you must attempt as many questions as you can.
8. You can carry out your rough work anywhere in the question book.
9. Put your pens down as soon as you hear 'STOP WRITING' otherwise your paper may be cancelled.
10. **Mobile phones are strictly prohibited in the Examination Hall.**
11. Anyone found using unfair means, will be disqualified automatically.

**SAMPLE TEST**

**MSc NUCLEAR MEDICINE / RADIATION AND MEDICAL ONCOLOGY**

**PART - I (70 Questions)**

**Q.1 Haemoptysis would be least likely to be present in**

- (A) pulmonary hypertension
- (B) viral pneumonias
- (C) bronchial adenomas
- (D) bronchiectasis

**Q.2 The electrocardiographic signs of pulmonary embolism include all of the following except**

- (A) a deep ST segment
- (B) left axis deviation
- (C) depressed S-T in leads I and II
- (D) prominent Q3 and inversion of T3

**Q.3 Sickle cell anemia is usually associated with all of the following except**

- (A) small or normal sized spleen
- (B) shortened erythrocyte life span
- (C) normal reticulocyte count
- (D) hemoglobin S

**Q.4 Visual impulse is associated with**

- (A) dissociation of rhodopsin to retinal and opsin
- (B) the reduction of NADP
- (C) the hydrolysis of visual purple
- (D) none of the above

**Q.5 Which of the following is a feature of Meckel's diverticulum**

- (A) severe haemorrhage per rectum
- (B) arises from Carther's duct
- (C) rarely ulcerates
- (D) none of the above

**Q.6 Acute myeloblastic leukemia (AML) is characterized by**

- (A) peak incidence in childhood
- (B) high leukocyte alkaline phosphate
- (C) Philadelphia chromosome
- (D) Auer bodies in blast cells

**Q.7 The major intracellular cat-ion is**

- (A) potassium
- (B) sodium
- (C) magnesium
- (D) calcium

**Q.8 The most sensitive technique for early diagnosis of gastric cancer is**

- (A) barrium swallow and UGI studies
- (B) fiberoptic endoscopy
- (C) clinical history
- (D) sputum cytology

**Q.9 Characteristics of hepatoma include all of the following EXCEPT**

- (A) commonly metastasize
- (B) poor prognosis
- (C) predisposing cirrhosis
- (D) markedly elevated alkaline phosphate

**Q.10 Respiratory distress, tachycardia, fever, and a non-productive cough occurring within 48 hours**

after abdominal surgery in an obese male would most likely to due to

- (A) pneumonia
- (B) pulmonary infarction
- (C) myocardial infarction
- (D) None of the above

**Q.11 Systemic lupus erythematosus occurs most commonly in**

- (A) elderly women
- (B) young men
- (C) women of childbearing age
- (D) Children



PART - II (30 Questions)

**Q.71 Which of the following does not contain covalent bonds?**

- (A) Hydrogen gas
- (B) Helium gas
- (C) Nitrogen gas
- (D) Solid sulfur

**Q.72 Isotopes have identical**

- (A) Nuclei
- (B) Number of protons
- (C) Number of neutrons
- (D) Mass numbers

**Q.73 Which of the following is not a unit of energy?**

- (A) Watt-second
- (B) Dyne
- (C) Calorie
- (D) Joule

**Q.74 A psychiatrist charges Rs. 100/- for the first hour of service and Rs. 75/- for each additional hour. How many hours of the psychiatrist's service is represented by a bill of Rs. 625/-?**

- (A) 6
- (B) 7
- (C) 7.5
- (D) 8

**Q.75 The fabric needed to make 3 pairs of drapes sells for Rs. 8/- per meter and can only be purchased by the full meter. If 1.6 meter is required for each pair of drapes, what is the total cost of the fabric?**

- (A) Rs. 48.00
- (B) Rs. 45.00
- (C) Rs. 36.00
- (D) Rs. 40.00

**Q.76** A medicine having cost price of Rs. 40/- is to be sold at 20% profit. Its sale price will be

- (A) Rs. 50
- (B) Rs. 48
- (C) Rs. 60
- (D) Rs. 54

**Q.77** The average diameter of a human capillary is 1/100 millimeter and the velocity of blood in it is 0.5 millimeter per second. The blood flow rate in the capillary is nearest to

- (A)  $3.927 \times 10^{-8} \text{ cm}^3/\text{s}$
- (B)  $4.927 \times 10^{-8} \text{ cm}^3/\text{s}$
- (C)  $5.927 \times 10^{-8} \text{ cm}^3/\text{s}$
- (D)  $6.927 \times 10^{-8} \text{ cm}^3/\text{s}$

**Q.78** Given the algebraic formula  $(a-b)^2 = a^2 - 2ab + b^2$ , the value of  $(0.99)^2$  is

- (A) 0.9900
- (B) 0.9801
- (C) 0.9901
- (D) 0.9888

**Q.79** The value of  $\log_{10} 1000$  is

- (A) 100
- (B) 3
- (C) 10
- (D) 1000

**Q.80** If  $\sqrt{x} + 12 = 37$ , then the value of x will be

- (A) 125
- (B) 25
- (C) 144
- (D) none of the above

**Q.81 An adiabatic process is one in which**

- (A) The pressure remains constant
- (B) The temperature of the process remains constant
- (C) No heat is transferred to or from the system
- (D) Friction is not considered

**Q.82 A constant force applied on a body of mass 10 kg produces a certain acceleration. If the same force is applied on a body having mass 40 kg, the acceleration produced will be**

- (A) Twice the initial value
- (B) Half of the initial value
- (C) Four times the initial value
- (D) One fourth of the initial value

**Q.83 After the passage of time equal to three half-lives, the activity of a radioactive sample will decrease by a factor of**

- (A) 3
- (B) 8
- (C) 9
- (D) 27

**Q.84 The wave length of certain diagnostic X-rays is  $6 \times 10^{-10}$  m. The frequency of these X-rays in cycles per second is**

- (A)  $5 \times 10^{17}$
- (B)  $18 \times 10^{17}$
- (C)  $18 \times 10^{10}$
- (D) None of the above

**Q.85 The pH value of a solution is changed from 5 to 3**

- (A) The solution is now more acidic
- (B) The solution is now more basic
- (C) The solution is neutral
- (D) No relation exists between pH and acidity / basicity

**Q.86**

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**Q.100**

The End