

2nd Year Paramedical (PMDC)  
Exam., 2022

PUBLIC HEALTH  
( Common Paper )

Time : 1½ hours

Full Marks : 20

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are three Groups, namely A, B and C.
- (iii) Group—A contains **TWELVE** questions, and Group—B contains **SIX** questions.
- (iv) The Examinees are asked to answer **TEN** questions from Group—A, and **FIVE** question from Group—B.

GROUP—A

Choose the correct option from the following

(any ten) :

1×10=10

1. Which of the following is not a live attenuated vaccine?
  - (a) BCG
  - (b) Salk
  - (c) Sabin
  - (d) Measles

( 2 )

2. What is ideal temperature to store DPT vaccine?
  - (a) Room temperature
  - (b) 4 °C to 8 °C —
  - (c) 0 °C to 20 °C
  - (d) 18 °C to 20 °C
3. What is the main purpose of sentinel surveillance?
  - (a) To find out the total numbers of cases
  - (b) For intervention of therapeutics
  - (c) To detect natural history of disease .
  - (d) Prevention of sentinel piles
4. How much chlorine will be available after fresh preparing of bleach?
  - (a) 20%
  - (b) 30%
  - (c) 33% —
  - (d) 40%
5. Which of the following is most powerful chemical disinfectant?
  - (a) Phenol
  - (b) Lysol
  - (c) Dettol
  - (d) Potassium permanganate —

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( Continued )

( 3 )

6. Which of the following diseases is not required isolation to break transmission?
  - (a) Measles
  - (b) Mumps
  - (c) Chickenpox
  - (d) Tetanus —
7. Which of the following constitutes specific protection?
  - (a) Immunization —
  - (b) Avoidance of allergens
  - (c) Healthy environment
  - (d) Chemoprophylaxis
8. Which of the following is a natality rate?
  - (a) Crude birthrate —
  - (b) Infant mortality rate
  - (c) Neonatal mortality rate
  - (d) General fertility rate

AK23/887

( Turn Over )

( 4 )

9. Inadequate intake by the pregnant woman of which vitamin may cause neural tube defects?
- (a) Niacin
  - (b) Riboflavin
  - (c) Folic acid
  - (d) Thiamine
10. Which immunization produces a permanent scar?
- (a) DPT
  - (b) BCG
  - (c) Measles
  - (d) Hepatitis B
11. A 4-week-old baby was brought to the health center for his first immunization. Which can be given to him?
- (a) DPT 1
  - (b) OPV 1
  - (c) Infant BCG
  - (d) Hepatitis B Vaccine

AK23/887

( Continued )

( 5 )

12. You are in a client's home to attend to a delivery. Which of the following will you do first?
- (a) Set up a sterile area
  - (b) Put on a clean gown and apron
  - (c) Cleanse the client's vulva with soap and water
  - (d) Note the interval, duration and intensity of labor and contractions

GROUP—B

Answer any five of the following (Short answer-type questions) : 2×5=10

13. Write the concept of health.
14. Write the full forms of :
- (a) FAO
  - (b) WHO
15. Write the four airborne disease.
16. List out the level of prevention.
17. When the NRHM is launched?
18. Infectious/pathological waste is collected in which bin?

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AK23—1140/887

Code : 307207

2nd Year Paramedical (PMDC)  
Exam., 2022

COMPUTER SKILLS

( Common Paper )

Time : 1½ hours

Full Marks : 20

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are two Groups, Group—A and Group—B.
- (iii) Group—A contains **TWELVE** questions and Group—B contains **SIX** questions.
- (iv) The students are asked to answer **TEN** questions from Group—A and **FIVE** questions from Group—B.

GROUP—A

Choose and write the correct answer (any ten) :

1×10=10

1. Which file format can be added to a PowerPoint show?

(a) .jpg

(b) .giv

(c) .wav

(d) All of the above

( 2 )

2. Material consisting of text and numbers is best presented as
- (a) a table slide ✓
  - (b) a bullet slide
  - (c) a litter slide
  - (d) All of the above
3. In the context of animations, which is a trigger?
- (a) An action button that advances to the next slide
  - (b) An item on the slide that performs an action when clicked
  - (c) The name of a motion path
  - (d) All of the above
4. Which of the following you should use if you want all the slides in the presentation to have the same 'look'?
- (a) The slide layout option
  - (b) Add a slide option
  - (c) Outline view
  - (d) A presentation design template ✓

AK23/888

( Continued )

( 3 )

5. A 'Recycle Bin' is a
- (a) folder on Desktop ✓
  - (b) file on Desktop
  - (c) folder in My Computer
  - (d) file in My Computer
6. To exit the PowerPoint
- (a) click the application minimize button
  - (b) click the document close button
  - (c) double click the application control menu icon ✓
  - (d) double click the document control menu icon
7. Which of these does not provide free E-mail?
- (a) Hotmail
  - (b) Rediff
  - (c) Whatsapp ✓
  - (d) Yahoo

AK23/888

( Turn Over )

( 4 )

8. Which of these should be avoided in an E-mail?
- (a) Wrong E-mail address
  - (b) Subject line
  - (c) Smileies
  - (d) Re-reading
9. Which of these is not a medium for e-mail?
- (a) Intranet
  - (b) Internet
  - (c) Extranet
  - (d) Paper
10. Which of these is the easiest way of communication?
- (a) E-mail
  - (b) Telephone
  - (c) Fax
  - (d) Letter

AK23/888

( Continued )

( 5 )

11. Name of the first popular web browser is
- (a) IBM browser
  - (b) Google Chrome
  - (c) Mozilla Firefox
  - (d) MOSAIC
12. First popular web browser was introduced in
- (a) 1993
  - (b) 1995
  - (c) 1998
  - (d) 1991

GROUP—B

Answer any *five* of the following questions :  $2 \times 5 = 10$

13. Explain the basic of computer networks.
14. Discuss IP address.
15. Explain search engines.
16. Describe the steps of getting an email account.
17. Explain instant messaging.
18. Discuss the basics of presentation.

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AK23—1140/888

Code : 307206

2nd Year Paramedical (PMDC)  
Exam., 2022

( BACHELOR OF RADIO-IMAGING TECHNOLOGY )

RADIATION BIOLOGY AND RADIATION  
PROTECTION

Time : 3 hours Full Marks : 70

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are three Groups, namely A, B and C.
- (iii) Group—A contains **TWELVE** questions, Group—B contains **SIX** questions and Group—C contains **THREE** questions.
- (iv) The students are asked to answer **TEN** questions from Group—A, **FOUR** questions from Group—B and **TWO** questions from Group—C.

GROUP—A

Choose the correct answer/Fill in the blanks

(any ten) :

2×10=20

1. Chromosomal aberration is an example of

(a) somatic effect

~~(b)~~ genetic effect

(c) physical effect

(d) None of the above

( 2 )

2. The unit of effective dose is
- (a) Gy
  - (b) R
  - (c) Sv
  - (d) Bq
3. Higher the time spent with radiation sources
- (a) lesser the radiation exposure
  - (b) higher the radiation exposure
  - (c) no effect on radiation exposure
  - (d) None of the above
4. Higher the thickness of shielding from radiation sources
- (a) lesser the radiation exposure
  - (b) higher the radiation exposure
  - (c) no effect on radiation exposure
  - (d) None of the above
5. Tumor cell
- (a) grows rapidly
  - (b) invades the surrounding structures
  - (c) metastasizes
  - (d) All of the above

AK23/900

( Continued )

( 3 )

6. GI syndrome occurs at
- (a) 1Gy whole body exposure
  - (b) 2Gy whole body exposure
  - (c) 5Gy whole body exposure
  - (d) 10Gy whole body exposure
7. Effective dose is the multiplication of equivalent dose with \_\_\_\_\_.
8. Tolerance dose of eye lens is 5 Gy.
9. ICRU stands for International Commission
10. Higher the time spent with radiation sources, \_\_\_\_\_ the radiation exposure.
11. AERB stands for Atomic energy regulatory Board.
12. 1Gy = 100 cGy

GROUP—B

Answer any four of the following questions : 7×4=28

13. Write in brief about the somatic and genetic effects of radiation.
14. Define tumor lethal dose and tissue tolerance dose.

AK23/900

( Turn Over )

15. Define exposure, kerma and dose.

16. Discuss about the various factors influence the cell survival curve.

17. Differentiate between malignant tumors and benign tumors.

18. Write about the multiple target theory.

GROUP—C

Answer any two of the following questions :  $11 \times 2 = 22$

19. Write in brief about the important features of AERB Safety Code.

20. Write about the hazards evaluation and control.

21. Write a short note on radiation emergencies.

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Code : 310203

**2nd Year Paramedical (PMDC)  
Exam., 2022**

( BACHELOR OF RADIO-IMAGING TECHNOLOGY )

**RADIOLOGICAL INSTRUMENTS**

Time : 3 hours

Full Marks : 70

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are three Groups, namely A, B and C.
- (iii) Group—A contains **TWELVE** questions, Group—B contains **SIX** questions and Group—C contains **THREE** questions.
- (iv) The Students are asked to answer **TEN** questions from Group—A, **FOUR** questions from Group—B and **TWO** questions from Group—C.

**GROUP—A**

Explain in short in one or two line(s) (any ten) :

2×10=20

1. Solid state detector

2. Ionization chamber

AK23/899

( Turn Over )

( 2 )

3. GM counter
4. Film badge
5. TLD
6. Line focus tube
7. DWI
8. Survey monitor
9. FLAIR
10. T1 weighted image
11. SWI
12. Panoramic imaging

GROUP—B

Answer any four of the following questions :  $7 \times 4 = 28$

13. Describe the radiological protective devices.
14. Describe cyclotron.

AK23/899

( Continued )

( 3 )

15. Describe advancement ultrasound probes.
16. Explain heel effect with diagram.
17. Describe artifacts of CT scanner.
18. Explain the use of computer in medical imaging.

GROUP—C

Answer any two of the following questions :  $11 \times 2 = 22$

19. Describe the principle and working of MRI.
20. Describe the therapy of X-ray tube in detail.
21. Describe the principle and working of PET scan.

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AK23—1140/899

Code : 310203

Code : 310201

2nd Year Paramedical (PMDC)  
Exam., 2022

( BACHELOR OF RADIO-IMAGING TECHNOLOGY )

PHYSICS AND ELECTRONICS OF  
RADIOLOGY

Time : 1½ hours

Full Marks : 35

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are three Groups, namely A, B and C.
- (iii) Group—A contains **SIX** questions, Group—B contains **THREE** questions and Group—C contains **TWO** questions.
- (iv) The students are asked to answer **FIVE** questions in Group—A, **TWO** questions in Group—B and **ONE** question in Group—C.

GROUP—A

Answer any five of the following in 1 or 2 line(s) :

2×5=10

1. Write the names of possible interaction of photons with matter.

2. Define radioactivity.

( 2 )

3. What is filtration of X-ray production?
4. Define half-value layer.
5. What is grid ratio?
6. Which is the most appropriate parameter to identify the X-ray beam quality?

GROUP—B

Answer any two of the following : 7×2=14

7. Define fluorescence and phosphorescence.
8. Write in brief about bremsstrahlung X-rays.
9. Explain the compositions of grid. Why is it used?

GROUP—C

Answer any one of the following : 11

10. Explain the photoelectric effect in detail. How is this effect very important in diagnostic radiology?
11. Explain with the help of diagrams about different types of anodes used in diagnostic radiology.

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Code : 310202

2nd Year Paramedical (PMDC)

Exam., 2022

1300989.

( BACHELOR OF RADIO-IMAGING TECHNOLOGY )

RADIATION PHYSICS

Time : 1½ hours

Full Marks : 35

Instructions:

- (i) The marks are indicated in the right-hand margin.
- (ii) There are three Groups, namely A, B and C.
- (iii) Group—A contains **SIX** questions, Group—B contains **THREE** questions and Group—C contains **TWO** questions.
- (iv) The students are asked to answer **FIVE** questions in Group—A, **TWO** questions in Group—B and **ONE** question in Group—C.

GROUP—A

Answer any five of the following in one or two line(s) :

2×5=10

1. What is coherent scattering?
2. What is a characteristic of X-ray?
3. What is the unit of exposure?

( 2 )

4. Define HVT.
5. What is inverse square law of radiation?
6. Define filtration in X-ray radiology.

GROUP—B

Answer any two of the following : 7×2=14

7. Explain the attenuation and absorption of radiation while passing through a medium.
8. How is radiographic film used as dosimeter?
9. Define exposure, kerma and dose.

GROUP—C

Answer any one of the following : 11

10. Write the basic physics behind the X-ray production in radiology.
11. Write elaborately about the various dosimetric quantities with their units.

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