Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021

Course Name - – Fundamental of Radiology and Imaging Technology Course Code - BPA405

- * You can submit the form ONLY ONCE.
- * Fill the following information for further process.
- * Required

1. Email *

2. Name of the Student *

- 3. Enter Full Student Code *
- 4. Enter Roll No *
- 5. Enter Registration No *
- 6. Enter Course Code *

7. Enter Course Name *

8. *

Mark only one oval.

- Diploma in Pharmacy
- Bachelor of Pharmacy
- B.TECH.(CSE)
- B.TECH.(ECE)
- BCA
- B.SC.(CS)
- B.SC.(BT)
- B.SC.(ANCS)
- B.SC.(HN)
- B.Sc.(MM)
- B.A.(MW)
- BBA
- B.A.(JMC)
- BBA(HM)
- BBA(LLB)
- B.OPTOMETRY
- B.SC.(MB)
- B.SC.(MLT)
- B.SC.(MRIT)
- B.SC.(PA)
- LLB
- <u>B.SC</u>(IT)-AI
- B.SC.(MSJ)
- Bachelor of Physiotherapy
- B.SC.(AM)
- Dip.CSE
- Dip.ECE

DIP.EE

<u>DIP.ME</u>

- .. . - -

- PGDHM
- MBA
- M.SC.(BT)
- M.TECH(CSE)
- M.A.(JMC)
- M.A.(ENG)
- M.SC.(MATH)
- M.SC.(MB)
- MCA
- M.SC.(MSJ)
- M.SC.(AM)
- M.SC.CS)
- M.SC.(ANCS)
- M.SC.(MM)
- B.A.(Eng)

Answer all the questions. Each question carry one mark.

9. 1. For X-rays to travel

- No medium required
- Presence of water
- Presence of oxygen
- None

10. 2. Soft X-ray have the tube voltage of

Mark only one oval.

_____ 0-10 kV

- 20-60 kV
- 150-400 kV
- 400-3000 kV
- 11. 3. Hard X-rays have tube voltage of

Mark only one oval.

- Accelerated light photons
- High speed electrons
- Low speed electrons

None

12. 4. The quantity of X-ray received at given point is dependent on

Mark only one oval.

kVp mA

- mAs
- Size of the focal spot

13. 5. The amount of the kinetic energy utilized in production of X-rays are

Mark only one oval.

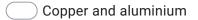
Less than 1% Less than 40% Less than 90% Less than 99%

14. 6. The filters used in diagnostic X-ray tubes are made up of

Mark only one oval.

\bigcirc	Aluminium
\bigcirc	Copper
\bigcirc	Tin
\bigcirc	Lead

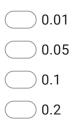
15. 7. Compound filter is made up of



- Copper and lead
- Lead and aluminium
- Aluminium and tin

16. 8. Efficiency of the X-ray production in rotating anode tube is

Mark only one oval.



17. 9. Inherent filtration in X-ray tube is 0.5-1 mm of

Mark only one oval.

\square) Lead equivalent
\square) Nickel equivalent
\square) Aluminium equivalent
\square) None

18. 10. The size of actual focal spot as compare to effective focal spot is



19. 11. Tungsten is the ideal material for anode because it has

Mark only one oval.

- High atomic number (74)
- High melting point (3370° C)
- High specific heat and high thermal conductivity
- 20. 12. The "Heel effect" is

Mark only one oval.

- Higher on cathode side than anode side
- Higher on anode side than cathode side
- Equal on both on cathode and anode side
- 21. 13. Anode "Heel effect can be used

- Thicker parts of the body towards cathode
- Thicker parts of the body towards anode
- No effect

22. 14. X-ray beam when fall on the body, act as

Mark only one oval.



23. 15. The photoelectric absorption involves

Mark only one oval.

- Incident X-ray photons has more energy than binding energy of K-sheel electron
- Involve tightly bound electron
- 📃 K-shell
- 24. 16. Photoelectric interaction results in excellent quality image due to

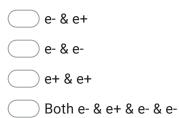
- P.E absorption does not produce scattered radiation
- 🔵 Enhances natural tissue contrast
- Both
- None

25. 17. Compton scattering involve

Mark only one oval.

- Moderate energy strikes outer shell electron
- Energy of scattered photon is increased
- Energy of scattered photon is increased
-) All
- 26. 18. Pair production occur, if energy is of

Mark only one oval.



27. 19. Mass density of bone is

- ____ 1850 kg/m
- _____ 320 kg/m
- ____ 910 kg/m
- 🔵 1000 kg/m

28. 20. Most of the time the speed of the modern X-ray tubes is

Mark only one oval.

3000 rpm
 3500 rpm
 4000 rpm
 None

29. 21. The heat generated in the anode of the X-ray tube is

Mark only one oval.

- Less than 1% Less than 30% Less than 75%
- Less than 99%
- 30. 22. Early causes of X-ray tube failure are

Mark only one oval.

Overheating

- Mechanical damage of filament/glass envelope
- Electric failure
- Any

31. 23. The X-ray tube said to be "gassy" when

Mark only one oval.

- Filament has burnt out
- Presence of the gas molecule
- Pitting of the anode
- None
- 32. 24. "Gassy tube" is diagnosed by any one of the following

Mark only one oval.

- No exposure
- ____ mA meter does not move
- ____ mA meter shows fluctuation
- mA meter shows full deflection during exposure
- 33. 25. In X-ray tube, the increase in filament current, the tube current

Mark only one oval.

Increases

____ Equal

- Decreases
- None

34. 26. Anode in rotating anode X-ray tube is made-up of

Mark only one oval.

Tungsten nickel alloy

- Tungsten rhenium alloy
- Nickel tin alloy
- Tungsten aluminium alloy
- 35. 27. Pin hole diameter of focal spot in X-ray tube is

Mark only one oval.

- 0.003 mm
 0.006 mm
 0.009 mm
 0.012 m m
- 36. 28. In rotating anode tube, heat produced in target, contribute to incident energy equal to



- 0.8
- 0.9
- 1

37. 29. Filament in X-ray tube emits electron by process

Mark only one oval.

\square	Space charge effect
\subset	Thermionic emission
\subset	oth
	None

38. 30. The current in X-ray tube range between

Mark only one oval.

- _____ 1-100 mA
- _____ 1-500 mA
- _____ 1-1000 mA
- 39. 31. Modern X-ray tubes used in diagnostic radiology has

Mark only one oval.

Vacuum

Carbon dioxide

None

40. 32. In modern X-ray tube, the amount of electrons utilized in producing X-rays are

Mark only one oval.



41. 33. The envelope in modern X-ray vacuum tube is made up of

Mark only one oval.

\bigcirc	Borosilicate glass envelope
\bigcirc	Metal envelope
\bigcirc	Lead envelope
\bigcirc	None

42. 34. Rating of the X-ray tube is directly proportional to

Mark only one oval.

____ kVp

- Size of the focus
- Rotation of the tube

43. 35. During fluoroscopy, the X-ray tube operates at

Mark only one oval.

Less than 5 mA
 10-15 mA
 25-35 mA
 Above 60 mA

44. 36. X-ray tube output is increased most strongly by increasing the

Mark only one oval.

Voltage	across	the	tube	(kVn)
Vullaye	aci 055	uie	lube	$(\mathbf{r} \mathbf{v} \mathbf{p})$

- Anode diameter
- Atomic number of the target
- Filtration
- 45. 37. X-ray tubes are surrounded by _____ to absorb unwanted radiation

Mark only one oval.

Lead

Glass

Aluminium 🗌

) Oil

46. 38. Which of the following are the ionizing radiation

Mark only one oval.

Alpha radiation

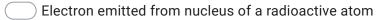
- Beta radiation
- Gamma radiation
- 47. 39. Alpha particles is a helium that contain

Mark only one oval.

- Two protons and two neutrons
- Two protons and one neutrons
- One protons and two neutrons
- One protons and one neutrons

48. 40. Beta particle is

Mark only one oval.



Electron emitted from nucleus of an atom

Both Electron emitted from nucleus of a radioactive atom & Electron emitted from nucleus of an atom

📃 None

49. 41. Which of the following is highly ionizing radiation with very short range in matter?

Mark only one oval.

- Alpha particle
- Beta particle
- 🔵 X-rays
- None
- 50. 42. Which of the following are called photons?

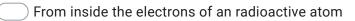
Mark only one oval.	M
X-ray	$\left(\right)$
🔵 Gamma ray	$\left(\right)$
Alpha ray	(

📃 Both X-ray & Gamma ray

51. 43. X-rays are emitted

Mark only one oval.

From electrons cloud of an atom that has stimulated artificially



Both From electrons cloud of an atom that has stimulated artificially & From inside the electrons of an radioactive atom

None

52. 44. Flux gain is

Mark only one oval.

- Number of output light photon divided by number of input X-ray photons
- Number of output light photons multiplied by number of input X-ray photons
- Number of output light photons plus number of input X-ray photons
- Number of output light photons number of input X-ray photons
- 53. 45. Magnification mode results in

Mark only one oval.

- Better spatial resolution
- Better contrast resolution
- Higher patient dose
- 54. 46. Intensity of radiation depends on

- Quality and quantity of X-ray photon
- Quality of X-ray photon
- Quantity of X-ray photon

55. 47. Quality of radiation depends on

Mark only one oval.

mAs
 kVp
 Sec
 Both mAs & kVp

56. 48. Function of the grid to

Mark only one oval.

- Absorb scatter radiation
- Transmit all primary radiation
- Both Absorb scatter radiation & Transmit all primary radiation
- None
- 57. 49. The effective device to reduce the scattered radiation is

Mark only one oval.

🔵 Grid

- Glass tube
- 🔵 Diaphragm
- Cone

58. 50. Parallel grid is commonly used with

Mark only one oval.

- Mobile units in the wards
- Conventional radiography units
- Both Mobile units in the wards & Conventional radiography units
- None
- 59. 51. Grid lines appear on radiograph with

Mark only one oval.

- Stationary grid
- Moving grid
- Both
- None
- 60. 52. Disadvantages of the moving are grid

Mark only one oval.

- Synchronism
- Vibration to set up in X-ray tube
- Requires approximately 15% more radiation to the patient

) All

61. 53. With high grid ratio, the exposure dose to the patient is

Mark only one oval.

Increased

- Decreased
- Unaffected
- None
- 62. 54. Air gap technique is used to

Mark only one oval.

- Reduce scattered radiation
- Magnification radiography
- Image sharpness deteriorates
-) All
- 63. 55. The function of the cone in skull radiography is

Mark only one oval.

- ____ To limit the field of the radiation
- To reduce the exposure
 - To increase the life of the X-ray tube

64. 56. Grid ratio is the

Mark only one oval.

Height of lead strip by distance between them

Distance between lead strips by height

Height of the lead strip multiplied by the distance

None

65. 57. The bucky factor _____ with increasing kVp.

Mark only one oval.

- Increases
- Decreases
- Halves
- Quarter
- 66. 58. As the bucky factor increases, patient dose_____ proportionately

- Decreases
 Increases
 Halves
- No effect

67. 59. High ratio grids are used for _____ examination.

Mark only one oval.

C Low kVp

- High kVp
- Both
- None
- 68. 60. High frequency generator has

Mark only one oval.

- High tube current with short exposure
- More efficient
- Ripple factor is minimum

This content is neither created nor endorsed by Google.

