

AIIMS BSC Nursing 2024 Question Paper

Time Allowed :2 Hours	Maximum Marks :480	Total questions :120
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1. Inner wall of microsporangia is:

- (A) Tepitame
 - (B) Epidermis
 - (C) Endothecium
 - (D) Middle layer
-

2. Which of the following hormones is not synthesized by anterior pituitary gland?

- (A) Prolactin
 - (B) Vasopresin
 - (C) LH
 - (D) FSH
-

3. Pneumotaxic center is present in:

- (A) Cerebellum
 - (B) Cerebrum
 - (C) Pons
 - (D) Medulla
-

4. PS I first wavelength / reaction center is:

- (A) Chl-680
 - (B) Chl-700
 - (C) Chl-660
 - (D) Chl-760
-

5. Which fruit has fibrous mesocarp?

- (A) Apple
 - (B) Coconut
 - (C) Strawberry
 - (D) Mango
-

6. Which kingdom is included in all kingdom system classifications?

- (A) Monera
 - (B) Protista
 - (C) Fungi
 - (D) Plantae and Animalia
-

7. In commensalism, two organisms have:

- (A) Benefit to both
 - (B) Harm to both
 - (C) Benefit to one and harm to the other
 - (D) Benefit to one and neither harm nor benefit to the other
-

8. Which of the following statements is not true?

- (A) Wing of bird and butterfly are analougous organ.
 - (B) Thorn of bouganvillia and tendril of cucurbita are homologous organ.
 - (C) Sweet potato and potato is an example of homologous organ.
 - (D) Eyes of octopus and human have similar functions but evolved independently.
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9. What are the organisms that eat dead and decaying matter?

- (A) Autotrophs
 - (B) Heterotrophs
 - (C) Saprotrophs
 - (D) Symbiotic
-

10. Which protein is present in muscle?

- (A) Myosin
 - (B) Keratin
 - (C) Serin
 - (D) Cellulose
-

11. Chiasmata formation occurs during which sub-stage of meiosis?

- (A) Pachytene
 - (B) Diplotene
 - (C) Leptotene
 - (D) Zygotene
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12. Androgen is secreted by which of the following cells?

- (A) Sertoli Cell
 - (B) Leydig Cell
 - (C) Follicle Cell
 - (D) Nurse Cell
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13. How is the male frog different from the female frog?

- (A) Copulatory Pad
 - (B) Vocal Sac
 - (C) Cloaca
 - (D) Abdominal Region
-

14. Which of the following is *not* a sexually transmitted disease (STD)?

- (a) Hepatitis B
 - (b) Syphilis
 - (c) Gonorrhea
 - (d) Ascariasis
-

15. Correct Match:

Match the following compounds with their correct categories:

- | | |
|----------------|----------|
| (A) Carotenoid | Polymer |
| (B) Abrin | Pigment |
| (C) Cellulose | Toxin |
| (D) Morphine | Alkaloid |
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16. Correct Statement:

Identify the correct scientific statement from the options below:

- (A) Chargaff's rule: $A + T = G + C$
 - (B) DNA is a polymer of nucleotides
 - (C) Euchromatin is loosely connected
 - (D) DNA backbone is composed of nitrogenous bases
-

17. Which statement about ammonia is *false*?

- (A) Kidney does not excrete ammonia
 - (B) More water is required for ammonia excretion
 - (C) Ammonia is a more toxic substance
 - (D) Ammonia is converted into urea
-

18. Which is the *incorrect* statement about Mycoplasma?

- (A) Cell wall present in Mycoplasma
 - (B) Pathogen for plant and animal
 - (C) Included in Monera
 - (D) Prokaryotic organism
-

Chemistry

19. Which of the following is the correct melting point order of dichlorobenzene isomers?

- (A) 1,2-Dichlorobenzene ; 1,3-Dichlorobenzene ; 1,4-Dichlorobenzene

- (B) 1,4-Dichlorobenzene ; 1,2-Dichlorobenzene ; 1,3-Dichlorobenzene
(C) 1,2-Dichlorobenzene ; 1,4-Dichlorobenzene ; 1,3-Dichlorobenzene
(D) 1,3-Dichlorobenzene ; 1,2-Dichlorobenzene ; 1,4-Dichlorobenzene
-

20. Benzaldehyde reacts with *conc.* NaOH to give:

- (A) Benzyl alcohol
(B) Sodium benzoate
(C) Phenol
(D) Benzyl alcohol and sodium benzoate
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21. Which enzyme converts glucose and fructose both into ethanol?

- (A) Invertase
(B) Zymase
(C) Maltase
(D) Diastase
-

22. What is the chemical name of Vitamin B6?

- (A) Biotin
(B) Thiamine
(C) Riboflavin
(D) Pyridoxine
-

23. Chemical formula of Water-gas is:

- (A) $\text{CO}_2 + \text{H}_2\text{O}$
(B) $\text{CO} + \text{H}_2$
(C) $\text{SO}_2 + \text{CO}_2 + \text{Heat}$
(D) $\text{CO} + \text{H}_2\text{O}_2$
-

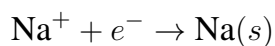
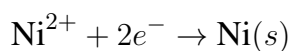
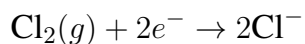
24. Which of the following correctly represents the order of basic strength among Group 15 hydrides?

- (A) $\text{BiH}_3 > \text{SbH}_3 > \text{AsH}_3 > \text{PH}_3 > \text{NH}_3$
(B) $\text{NH}_3 > \text{PH}_3 > \text{AsH}_3 > \text{SbH}_3 > \text{BiH}_3$
(C) $\text{NH}_3 \downarrow \text{PH}_3 \downarrow \text{AsH}_3 \downarrow \text{SbH}_3 \downarrow \text{BiH}_3$
(D) $\text{PH}_3 > \text{NH}_3 > \text{AsH}_3 > \text{SbH}_3 > \text{BiH}_3$
-

25. Which of the following is Hinsberg reagent?

- (A) $\text{C}_6\text{H}_5\text{SO}_2\text{CH}_3$
(B) SnCl_2
(C) $\text{C}_6\text{H}_5\text{SO}_2\text{Cl}$
(D) CoCl_2
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26. Standard electrode potentials of Na, Ni, and Cl are given. Which one has the highest reducing power?



- (A) Cl_2
(B) Ni^{2+}
(C) Na^+
(D) All have equal reducing power
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27. A reaction with reaction quotient Q_C and equilibrium constant K_C will proceed in the direction of the products when:

- (A) $Q_C = K_C$
(B) $Q_C > K_C$
(C) $Q_C < K_C$
(D) $Q_C = 0$
-

28. Which of the following is not isoelectronic?

- (A) CO
 - (B) CN^-
 - (C) NO^+
 - (D) O_2^{2-}
-

29. LiH, HClO_4 , O_3 , P_4 Oxidation states of the elements are respectively:

- (A) $-1, +7, 0, 0$
 - (B) $+1, +7, -1, 0$
 - (C) $-1, +5, -1, +3$
 - (D) $+1, +5, 0, 0$
-

30. Which of the following has a higher dipole moment?

- (A) NH_3
 - (B) NF_3
 - (C) Both have equal dipole moments
 - (D) None of the above
-

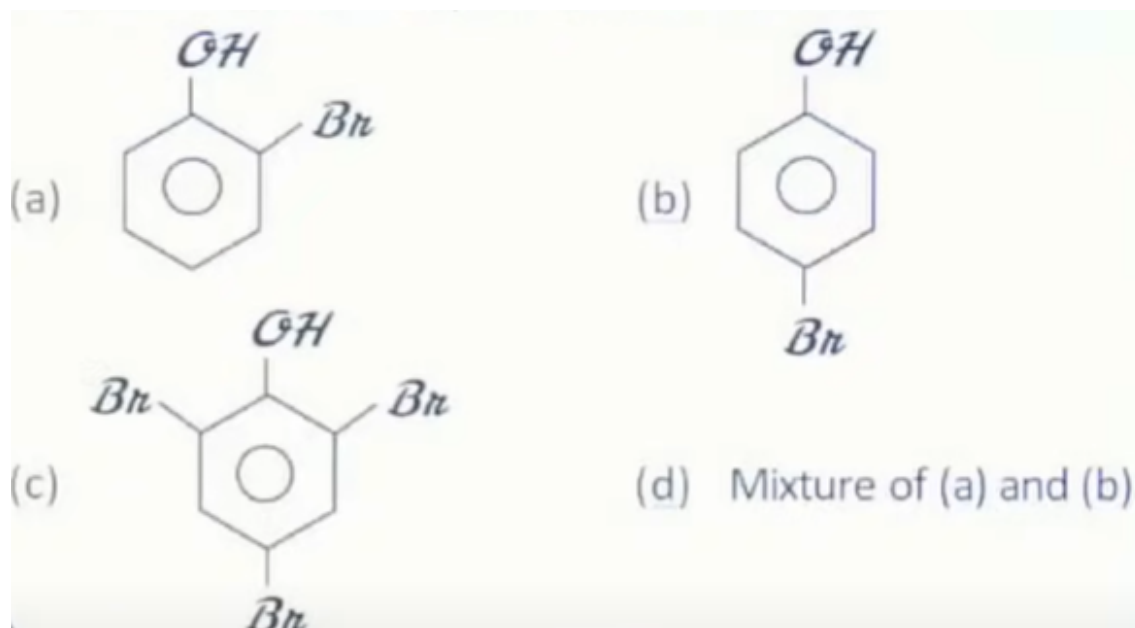
31. Triclinic crystal system has the following unit cell dimensions:

- (A) $a = b = c$ and $\alpha = \beta = \gamma = 90^\circ$
 - (B) $a = b \neq c$ and $\alpha = \beta = \gamma = 90^\circ$
 - (C) $a \neq b \neq c$ and $\alpha \neq \beta \neq \gamma \neq 90^\circ$
 - (D) $a = b \neq c$ and $\alpha = \beta = 90^\circ, \gamma = 120^\circ$
-

32. Point out the wrong statement: Physical adsorption is characterised by

- (A) Attraction due to weak Vander Waal's forces
 - (B) Irreversible nature of adsorption
 - (C) Multimolecular adsorption layers
 - (D) Decrease in adsorption with increase in temperature
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33. With excess bromine, phenol reacts to form



34. The IUPAC name of the complex compound $[\text{CoCl}_2(\text{en})_2]\text{Cl}$ is:

- (A) Dichloridobis(ethane-1,2-diamine)cobalt(III) chloride
- (B) Dichloridobis(ethane-2,1-diamine)cobalt(III) chloride
- (C) Dichloridobis(ethylenediamine)cobalt(III) chloride
- (D) Bis(ethylenediamine)cobalt(III) chloride

35. Muscle cells contain _____ protein.

- (A) Casein
- (B) Actin
- (C) Myosin
- (D) Lactose

36. Which of the following shows ferrimagnetism?

- (A) TiO_2
- (B) CrO_2
- (C) MnO
- (D) Fe_3O_4

37. What is the conjugate base of HSO_4^- ?

- (A) SO_4^{2-}
- (B) H_2SO_3
- (C) OH^-
- (D) H_2SO_4

38. Amorphous substances show

- (A) isotropic
- (B) Short range order
- (C) Long range order
- (D) Have no sharp M.P.

39. Which of the following series in the spectrum of hydrogen atom lies in the visible region of the electromagnetic spectrum?

- (a) Paschen series
- (b) Balmer series
- (c) Lyman series
- (d) Brackett series

40. Calculate the angular velocity of an electron in a hydrogen atom in the second orbit ($n = 2$).

- (A) $5.15 \times 10^{15} \text{ rad/s}$
- (B) $7.15 \times 10^{15} \text{ rad/s}$
- (C) $8.15 \times 10^{15} \text{ rad/s}$
- (D) $12.25 \times 10^{15} \text{ rad/s}$

42. Which planet is referred to as the "Swift" planet?

- (A) Venus
- (B) Mars

- (C) Mercury
 - (D) Jupiter
-

43. Who was the first Indian woman to receive the Arjuna Award?

- (A) P. T. Usha
 - (B) Karnam Malleswari
 - (C) Mary Kom
 - (D) N. Lumsden
-

44. A book always has:

- (A) Pages
 - (B) Chapter
 - (C) Diagram
 - (D) Cover
-

Physics

45. An object is placed 10 cm in front of a concave mirror with a focal length of 20 cm. What is the magnification produced?

- (A) 1
 - (B) 2
 - (C) 0.5
 - (D) -2
-

46. What is the angular momentum of an electron in an atom if the principal quantum number $n = 2$?

- (A) $\frac{h}{2\pi}$
 - (B) $\frac{2h}{\pi}$
 - (C) $\frac{2h}{2\pi}$
 - (D) $\frac{nh}{2\pi}$
-

47. If $L = 40 \text{ mH}$, $C = 100 \mu\text{F}$, what is the angular frequency ω at resonance?

- (A) 400
 - (B) 100
 - (C) 500
 - (D) 250
-

48. What is the molar specific heat at constant volume C_V of a diatomic gas molecule if one additional vibrational degree of freedom is considered?

- (A) $\frac{5}{2}R$
 - (B) $\frac{6}{2}R$
 - (C) $\frac{7}{2}R$
 - (D) $\frac{9}{2}R$
-

49. If the energy band gap is 0.72 eV , what is the wavelength of the emitted photon?

- (A) $1.1 \mu\text{m}$
 - (B) $1.4 \mu\text{m}$
 - (C) $1.7 \mu\text{m}$
 - (D) $2.0 \mu\text{m}$
-

50. A current of $I = 20 \mu\text{A}$ flows in a long straight wire. What is the magnetic field B at a distance $r = 1 \text{ cm}$ from the wire?

- (A) $20 \times 10^{-11} \text{ T}$
 - (B) $30 \times 10^{-11} \text{ T}$
 - (C) $40 \times 10^{-11} \text{ T}$
 - (D) $50 \times 10^{-11} \text{ T}$
-

51. In an inelastic collision, two bodies with masses $m_1 = 1 \text{ kg}$ and $m_2 = 3 \text{ kg}$ collide. Their initial velocities are $u_1 = 2 \text{ m/s}$ and $u_2 = 0 \text{ m/s}$, respectively. What is the change in kinetic energy (ΔK)?

- (A) 1.0 J

- (B) 1.2 J
 - (C) 1.5 J
 - (D) 2.0 J
-

52. A moon completes one revolution around the Earth in 27 days. If the size (mass) of the moon becomes four times its original size, what will be the new time period?

- (A) 54 days
 - (B) 13.5 days
 - (C) 108 days
 - (D) 6.75 days
-

53. 1 mole of oxygen is heated at constant pressure (1 atm) from 20°C to 80°C , and then cooled from 80°C to 20°C at constant volume. If $C_p = 7.03 \text{ cal/mol}^{\circ}\text{C}$ and $C_v = 5.04 \text{ cal/mol}^{\circ}\text{C}$, what is the difference between the heat supplied and the heat rejected?

- (A) 302.4 cal
 - (B) 119.4 cal
 - (C) 421.8 cal
 - (D) 60.0 cal
-

54. If the day before yesterday was Tuesday, what will be the day after tomorrow?

- (A) Sunday
 - (B) Saturday
 - (C) Monday
 - (D) Thursday
-

55. Ram said, "Anu's mother is the only daughter of my mother." How is Anu related to Ram?

- (A) Maternal Uncle
- (B) Niece
- (C) Aunt

(D) Father

56. Identify the odd one out in the sequence:

5, 7, 9, 12, 14, 16

(A) 5

(B) 7

(C) 12

(D) 14

57. Seema earns 800 per week. After 30 days, her weekly income becomes ₹960. What is the percentage increase in her income?

(A) 10%

(B) 15%

(C) 20%

(D) 25%
