

PROVISIONAL ANSWER KEY

Question Paper Code: 6/2026/OL

Exam:BPHARM 2026 -1

Date of Test: 18-04-2026

1. The molarity of an aqueous solution containing 0.4g of NaOH (molar mass=40g/mol) in 250mL of a solution is
- A) 0.04M
 - B) 0.02M
 - C) 0.20M
 - D) 0.40M
 - E) 0.08M

Correct Answer : Option A

2. The series of spectral lines obtained in the ultraviolet region of hydrogen atomic spectrum constitute
- A) Balmer series
 - B) Lyman series
 - C) Paschen series
 - D) Brackett series
 - E) Pfund series

Correct Answer : Option B

3. The wave number of an yellow radiation with wavelength 580 nm is
- A) $1.724 \times 10^2 \text{ cm}^{-1}$
 - B) $1.724 \times 10^4 \text{ cm}$
 - C) $1.724 \times 10^3 \text{ cm}^{-1}$
 - D) $1.724 \times 10^3 \text{ cm}$
 - E) $1.724 \times 10^4 \text{ cm}^{-1}$

Correct Answer : Option E

4. The wavelength of a fast moving particle (λ) is related to its momentum (p) and Planck's constant (h) as
- A) $\lambda = hp$
 - B) $\lambda = h^2 / p$
 - C) $\lambda = h / p$
 - D) $\lambda = p^2 / h$
 - E) $\lambda = h / p^2$

Correct Answer : Option C

5. According to the law of triads, the properties of the middle element were in between those of the other two elements. This law was proposed by
- A) Dobereiner
 - B) Dimitri Mendeleev
 - C) Lothar Mayer
 - D) Newlands
 - E) Henry Moseley

Correct Answer : Option A

6. Mendeleev called the undiscovered element after aluminium at his time as Eka-aluminium. What is the present name of the element after its discovery?
- A) Germanium
 - B) Indium
 - C) Thallium
 - D) Molybdenum
 - E) Gallium

Correct Answer : Option E

7. Which one of the following elements has the largest atomic radius?
- A) Sodium
 - B) Caesium
 - C) Fluorine
 - D) Iodine
 - E) Potassium

Correct Answer : Option B

8. Which one of the following molecules has the lowest bond length (in pm)?
- A) F₂
 - B) Cl₂
 - C) HF
 - D) Br₂
 - E) O₂

Correct Answer : Option C

9. The molecule with expanded octet is
- A) ozone
 - B) nitric oxide
 - C) nitrogen dioxide
 - D) water

E) sulphur hexafluoride

Correct Answer : Option E

10. The hybridization involved in the central atom of PCl_5 is

- A) dsp^3
- B) sp^3d^2
- C) sp^2d^2
- D) d^2sp^3
- E) sp^3d

Correct Answer : Option E

11. 1 g of graphite is burnt completely in excess oxygen at 298K and 1 atmospheric pressure in a bomb calorimeter. During the reaction, the temperature raises from 298K to 299K. If the heat capacity of the bomb calorimeter is 20.7 kJ mol^{-1} , what is the enthalpy of combustion of C(gr)? (Atomic mass of carbon is 12 g mol^{-1})

- A) -248 kJ mol^{-1}
- B) $+236 \text{ kJ mol}^{-1}$
- C) -236 kJ mol^{-1}
- D) $+246 \text{ kJ mol}^{-1}$
- E) -268 kJ mol^{-1}

Correct Answer : Option A

12. Which of the following is an intensive property?

- A) Mass
- B) Volume
- C) Density
- D) Heat capacity
- E) Enthalpy

Correct Answer : Option C

13. The mathematical statement of the first law of thermodynamics with the usual notation is

- A) $\Delta U = w - q$
- B) $q = \Delta U \times w$
- C) $W = q + \Delta U$
- D) $\Delta U = q/w$
- E) $\Delta U = q + w$

Correct Answer : Option E

14. The pH of an aqueous solution of weak mono acidic base is 11. What is the $[\text{H}^+]$ of the solution? [$\text{pK}_w = 14$]

- A) $1 \times 10^{-11} \text{ M}$
- B) $1 \times 10^{-13} \text{ M}$
- C) $1 \times 10^{-14} \text{ M}$
- D) $1 \times 10^{-3} \text{ M}$
- E) $1 \times 10^{-10} \text{ M}$

Correct Answer : Option A

15. K_C for the reaction $A_{(g)} + 2B_{(g)} \rightleftharpoons C_{(g)} + 2D_{(g)}$ is 4.0 at 300 K. What is the value of K_c for the reaction, $2C_{(g)} + 4D_{(g)} \rightleftharpoons 2A_{(g)} + 4B_{(g)}$ at 300 K?

- A) 8.0
- B) 1/8
- C) 1/2
- D) 16
- E) 1/16

Correct Answer : Option E

16. In which of the following compound oxygen is in -1 oxidation state?

- A) Water
- B) Manganese dioxide
- C) Hydrogen peroxide
- D) Carbon dioxide
- E) Potassium nitrate

Correct Answer : Option C

17. Which of the following half-cell reaction has the most negative standard electrode potential?

- A) $Li^+_{(aq)} + e^- \rightarrow Li_{(s)}$
- B) $F_{2(g)} + 2e^- \rightarrow 2F^-_{(aq)}$
- C) $Na^+_{(aq)} + e^- \rightarrow Na_{(s)}$
- D) $I_{2(aq)} + 2e^- \rightarrow 2I^-_{(aq)}$
- E) $Cu^+_{(aq)} + e^- \rightarrow Cu_{(s)}$

Correct Answer : Option A

The limiting molar conductance for aqueous solution of $CaCl_2$ at 298K is 271.6

18. $S \text{ cm}^2 \text{ mol}^{-1}$. If the limiting ionic conductance of Ca^{2+} ion at the same temperature is 119 $S \text{ cm}^2 \text{ mol}^{-1}$ what is the limiting ionic conductance of Cl^- ion?

- A) 152.6 $S \text{ cm}^2 \text{ mol}^{-1}$
- B) 76.3 $S \text{ cm}^2 \text{ mol}^{-1}$
- C) 135.8 $S \text{ cm}^2 \text{ mol}^{-1}$
- D) 228.7 $S \text{ cm}^2 \text{ mol}^{-1}$

E) $114.35 \text{ S cm}^2 \text{ mol}^{-1}$

Correct Answer : Option B

19. Which of the following aqueous non-electrolyte solution will produce the highest freezing point if 20g of the solute is dissolved in 1000g of water?

- A) Sucrose
- B) Glycerol
- C) Ethanol
- D) Glucose
- E) Methanol

Correct Answer : Option A

20. Isotonic solutions have identical

- A) boiling point
- B) freezing point
- C) vapour pressure
- D) osmotic pressure
- E) lowering of vapour pressure

Correct Answer : Option D

21. Which of the following is a first order reaction?

- A) Decomposition of ammonia on Pt surface at high temperature.
- B) Hydrogenation of ethene to ethane.
- C) Decomposition of HI on gold surface.
- D) Hydrolysis of ethyl acetate in the presence of NaOH.
- E) Oxidation of KI by peroxy disulphate.

Correct Answer : Option B

22. The units of rate constants of two reactions I and II are respectively $\text{mol}^{-1} \text{ L s}^{-1}$ and $\text{mol L}^{-1} \text{ s}^{-1}$. Then,

- A) reaction I is first order and reaction II is second order.
- B) reaction I is second order and reaction II is first order.
- C) reaction I is first order and reaction II is zero order.
- D) reaction I is zero order and reaction II is first order.
- E) reaction I is second order and reaction II is zero order.

Correct Answer : Option E

23. A first order reaction is 75% completed in 1000 s at 300 K. What is its half-life period at 300 K?

- A) 500 s
- B) 250 s

- C) 750 s
- D) 230 s
- E) 800 s

Correct Answer : Option A

24. The first transition series metal that exhibits only +2,+3,+4 and +6 oxidation states is

- A) Cr
- B) Mn
- C) Fe
- D) Co
- E) Ni

Correct Answer : Option C

25. The calculated magnetic moment of two dipositive ions of 3d series element is 4.9 BM. The ions are

- A) Ti^{2+} and Sc^{2+}
- B) Mn^{2+} and Cr^{2+}
- C) V^{2+} and Ti^{2+}
- D) Cr^{2+} and Fe^{2+}
- E) Fe^{2+} and Ni^{2+}

Correct Answer : Option D

26. The substance used to convert sodium chromate to sodium dichromate in one of the stages of preparation of potassium dichromate is

- A) H_2O_2
- B) $KClO_3$
- C) NaOH
- D) Na_2CO_3
- E) H_2SO_4

Correct Answer : Option E

27. $[Ag(NCS)_2]^-$ and $[Ag(SCN)_2]^-$ are

- A) coordination isomers
- B) ionisation isomers
- C) linkage isomers
- D) solvate isomers
- E) optical isomers

Correct Answer : Option C

28. The type of hybridisation of Co in $[\text{CoF}_6]^{3-}$ complex ion is

- A) dsp^2
- B) sp^3d^2
- C) d^2sp^3
- D) sp^2d
- E) sp^3

Correct Answer : Option B

29. The IUPAC name of the following alkane is
 $\text{CH}_3\text{-CH}_2\text{-CH}(\text{C}_2\text{H}_5)\text{-CH}_2\text{-CH}(\text{CH}_3)\text{-CH}_2\text{-CH}_3$

- A) 3-methyl-5-ethylheptane
- B) 3,5-diethylhexane
- C) 4,6-diethylhexane
- D) 3-ethyl-5-methylheptane
- E) 3-ethyl-5,6-dimethylhexane

Correct Answer : Option D

An organic compound is heated with Na_2O_2 then boiled with HNO_3 . The solution is then
30. treated with ammonium molybdate. The yellow precipitate obtained is due to the presence of the element

- A) nitrogen
- B) sulphur
- C) phosphorus
- D) carbon
- E) molybdenum

Correct Answer : Option C

31. CH_3I cannot be prepared by direct iodination of methane as the reaction is slow and reversible. However, it can be prepared by carrying out the reaction in the presence of

- A) H_2SO_4
- B) NaOH
- C) HCl
- D) H_3PO_4
- E) HIO_3

Correct Answer : Option E

32. One mole of an alkene on ozonolysis gives two moles of propanone. What is the alkene?

- A) 1,3-Butadiene
- B) 2,3-Dimethyl-2-butene
- C) 2,3-Dimethyl-1-butene

- D) 2-Methyl-1-butene
- E) 2-Methyl-1,3-butadiene

Correct Answer : Option B

33. Choose the Swarts reaction in the following:

- A) $\text{CH}_3\text{OH} + \text{PCl}_5 \rightarrow \text{CH}_3\text{Cl} + \text{POCl}_3 + \text{HCl}$
- B) $2\text{CH}_3\text{Cl} + 2\text{Na} \rightarrow \text{C}_2\text{H}_6 + 2\text{NaCl}$
- C) $\text{CH}_3\text{Br} + \text{AgF} \rightarrow \text{CH}_3\text{F} + \text{AgBr}$
- D) $\text{CH}_3\text{Cl} + \text{NaI} \rightarrow \text{CH}_3\text{I} + \text{NaCl}$
- E) $\text{CH}_3\text{I} + \text{CH}_3\text{ONa} \rightarrow \text{CH}_3\text{-O-CH}_3 + \text{NaI}$

Correct Answer : Option C

34. Which of the following is a gas at 300K?

- A) Chloroethane
- B) Bromoethane
- C) Iodoethane
- D) 1-Chloropropane
- E) 1-Bromopropane

Correct Answer : Option A

35. Reimer-Tiemann reaction using CHCl_3 and aq. NaOH involves the conversion of phenol into

- A) benzene
- B) salicylic acid
- C) anisole
- D) chlorobenzene
- E) salicylaldehyde

Correct Answer : Option D

36. When a mixture of CO and H_2 is heated at 573 K-673 K under 200-300 atmospheric pressure in the presence of a catalyst, methanol is produced. The catalyst used is

- A) Pt- BaSO_4
- B) ZnO- Cr_2O_3
- C) Ni- Cr_2O_3
- D) Pd- BaSO_4
- E) CuO- Cr_2O_3

Correct Answer : Option B

37. 2-Methylpropene is obtained when sodium methoxide reacts with

- A) n-butyl bromide
- B) n-propyl bromide
- C) sec-butyl bromide
- D) isopropyl bromide
- E) tert-butyl bromide

Correct Answer : Option E

38. Which of the following compound undergoes aldol condensation?

- A) Methanal
- B) Phenylmethanal
- C) 2,2-Dimethylpropanal
- D) Ethanal
- E) Acetophenone

Correct Answer : Option D

39. When benzoyl chloride is treated with H_2 in the presence of $Pd-BaSO_4$, benzaldehyde is formed. This reaction is called

- A) Clemmensen reduction
- B) Wolff-Kischner reduction
- C) Rosenmund reduction
- D) Cannizaro reaction
- E) Williamson reaction

Correct Answer : Option C

40. The aldehyde that does not respond to Fehling's test is

- A) methanal
- B) ethanal
- C) propanal
- D) butanal
- E) phenylmethanal

Correct Answer : Option E

41. Which of the following amine has the highest boiling point?

- A) $CH_3CH_2NH_2$
- B) $CH_3CH_2CH_2CH_2NH_2$
- C) $(C_2H_5)_2NH$
- D) $(CH_3)_2NC_2H_5$
- E) $CH_3CH_2CH_2NH_2$

Correct Answer : Option B

42. When benzene diazonium chloride is treated with Cu and HBr, bromobenzene, N₂ and CuCl are obtained. This reaction is called
- A) Hoffmann reaction
 - B) Gabriel reaction
 - C) Sandmeyer reaction
 - D) Gatterman reaction
 - E) Hinsberg's reaction

Correct Answer : Option D

43. Aniline reacts with acetic anhydride in pyridine to give a product which reacts with Br₂ in CH₃COOH to get
- A) *o*-bromoaniline
 - B) *p*-bromoaniline
 - C) *p*-bromoacetanilide
 - D) *o*-bromoacetanilide
 - E) *m*-bromoacetanilide

Correct Answer : Option C

- Which among the following proteins are globular proteins?
44. (i) Keratin (ii) Insulin (iii) Albumin (iv) Myosin
Choose the correct answer from the following choices;
- A) (i), (ii) & (iii)
 - B) (i) & (iv)
 - C) (ii) & (iii)
 - D) (i) & (ii)
 - E) (iii) & (iv)

Correct Answer : Option C

45. Which of the following acid is a vitamin?
- A) Aspartic acid
 - B) Glutamic acid
 - C) Saccharic acid
 - D) Ascorbic acid
 - E) Valine

Correct Answer : Option D

46. Which one of the following physical quantities has dimensions?
- A) Strain
 - B) Poisson's ratio
 - C) Angle
 - D) Gravitational constant

E) Relative density

Correct Answer : Option D

47. A bus covers half of the total distance with a speed of 30 kmh^{-1} and other half with a speed of 60 kmh^{-1} . The average speed during the total journey is

- A) 35 kmh^{-1}
- B) 40 kmh^{-1}
- C) 45 kmh^{-1}
- D) 42 kmh^{-1}
- E) 50 kmh^{-1}

Correct Answer : Option B

48. If a body starts from rest and moves with constant acceleration of 2 ms^{-2} , then the distance covered between the time intervals 5 s and 6 s is

- A) 8 m
- B) 15 m
- C) 11 m
- D) 18 m
- E) 6 m

Correct Answer : Option C

49. FALSE statement about third law of motion is

- A) Forces in nature always occur between pairs of bodies
- B) If $\vec{F}$ is a force on body A by body B then $-\vec{F}$ is the force on B by body A
- C) Action and reaction forces are simultaneous forces
- D) Any of the two mutual forces can be called action and the other reaction
- E) There is cause-effect relation between action and reaction

Correct Answer : Option E

50. A cyclist speeding at a velocity v on a level road takes a sharp circular turn of radius R . If μ is the static friction between the tyres and road, then the condition for the cyclist not to slip is

- A) $v^2 \geq \mu R$
- B) $v^2 \leq \mu Rg$
- C) $v \leq \mu Rg$
- D) $v = \frac{\mu R}{g}$
- E) $v^2 \geq \frac{\mu R}{g}$

Correct Answer : Option B

51. If $\vec{F}$ and $\vec{S}$ represent the applied force and displacement of an object, then the work done is

- A) zero if $\vec{F}$ and $\vec{S}$ are in the same direction
- B) maximum if $\vec{F}$ and $\vec{S}$ are at right angles to each other
- C) the area under the graph between $\vec{F}$ and $\vec{S}$
- D) positive if the angle between $\vec{F}$ and $\vec{S}$ is obtuse
- E) negative if the angle between $\vec{F}$ and $\vec{S}$ is acute

Correct Answer : Option C

52. If a body at rest undergoes displacement under the action of force with constant acceleration, then the power delivered by the force at any time t is proportional to

- A) t
- B) $\sqrt{t}$
- C) t^2
- D) $\frac{1}{t}$
- E) t^3

Correct Answer : Option A

53. If a ring of mass 50 g and radius 2cm is rolling on a smooth horizontal platform with its centre of mass moving with a speed of 50 cms^{-1} , then its total energy is

- A) $1.0 \times 10^{-2} J$
- B) $1.25 \times 10^{-2} J$
- C) $2.5 \times 10^{-2} J$
- D) $3.5 \times 10^{-2} J$
- E) $1.5 \times 10^{-2} J$

Correct Answer : Option B

54. A couple produces a

- A) linear motion
- B) translational motion
- C) vibrational motion
- D) rotational motion
- E) both rotational and vibrational motion

Correct Answer : Option D

55. The ratio of the escape velocities from the surface of two planets having densities and radii in the ratio 2 : 1 and 1 : 2 respectively is

- A) 1 : 1
- B) 1 : 2
- C) 1 : $\sqrt{2}$
- D) 1 : $\sqrt{3}$
- E) 1 : 4

Correct Answer : Option C

56. If a cylinder is stretched by two equal forces applied normal to its cross-section, then the restoring force per unit area is called

- A) tensile stress
- B) tangential stress
- C) shearing stress
- D) compressive stress
- E) transvers stress

Correct Answer : Option A

57. If the gauge pressure at a point well inside a liquid of density ρ in a tank is p , then the depth of the point from the surface of the liquid is (atmospheric pressure is P)

- A) $\frac{P - p}{\rho g}$
- B) $\frac{P + p}{\rho g}$
- C) $\frac{P}{\rho g}$
- D) $\frac{p}{\rho g}$
- E) $\frac{p^2}{\rho g}$

Correct Answer : Option D

58. If C_v is the specific heat capacity at constant volume of a gas, then the amount of heat required to increase the temperature of 2 moles of the gas from 27°C to 127°C at constant volume is

- A) $100 C_v$
- B) $50 C_v$
- C) $500 C_v$
- D) $300 C_v$
- E) $200 C_v$

Correct Answer : Option E

59. The INCORRECT assumption in the kinetic theory of gases is

- A) Interactions between molecules is negligible
- B) Collisions between molecules are elastic in nature

- C) Molecules move in straight lines between any two collisions
- D) During collisions total kinetic energy is not conserved
- E) Gas molecules are in incessant random motion

Correct Answer : Option D

- 60.** When a tuning fork of frequency 256 Hz is sounded together with unknown tuning fork, 4 beats are heard in one second. The frequency of the unknown tuning fork can be
- A) 260 Hz or 252 Hz
 - B) 258 Hz or 256 Hz
 - C) 250 Hz or 256 Hz
 - D) 248 Hz or 255 Hz
 - E) 257 Hz or 215 Hz

Correct Answer : Option A

- 61.** The magnitude and direction of acceleration change in the case of an object
- A) executing simple harmonic motion
 - B) in circular motion at constant speed
 - C) falling under gravity from lower altitudes
 - D) falling under gravity from higher altitudes
 - E) falling in a viscous liquid medium

Correct Answer : Option A

- If n electrons from a neutral solid sphere are transferred to another solid sphere having m electrons ($m > n$), then the charges on the respective spheres are (e = charge of an electron)
- 62.**
- A) $+ne$ and $-(m-n)e$
 - B) $-ne$ and $+(m-n)e$
 - C) $+ne$ and $+(m-n)e$
 - D) $+ne$ and $-(m+n)e$
 - E) $-ne$ and $-(m+n)e$

Correct Answer : Option D

- An isolated capacitor of capacitance $100 \mu\text{F}$ is charged to 32 C. If 16 C of charge is discharged from it, then its capacitance value is
- 63.**
- A) $50 \mu\text{F}$
 - B) $100 \mu\text{F}$
 - C) $5 \mu\text{F}$
 - D) $200 \mu\text{F}$
 - E) $32 \mu\text{F}$

Correct Answer : Option B

64. In an electric circuit, if 2A , 5 A and 4 A are the currents entering a junction and I_x , 2A and 3A are the currents leaving the junction, then the current value I_x is
- A) 2A
 - B) 3A
 - C) 4A
 - D) 5A
 - E) 6A

Correct Answer : Option E

65. If three tube lights with power 10 W, 25 W and 50 W are connected in parallel to a source voltage V, then the effective power of the combination is
- A) 8 W
 - B) 85 W
 - C) 28.3 W
 - D) 50 W
 - E) 6.25 W

Correct Answer : Option B

66. The current that has to pass through a single circular loop of radius 10 cm to produce a magnetic field of μ_0 tesla at its centre is
- A) 1 A
 - B) 0.2 A
 - C) 0.4A
 - D) 0. 5A
 - E) 0.3A

Correct Answer : Option B

67. As temperature increases, at Curie temperature
- A) paramagnet becomes ferromagnet
 - B) diamagnet becomes ferromagnet
 - C) diamagnet becomes paramagnet
 - D) ferromagnet becomes paramagnet
 - E) ferromagnet becomes diamagnet

Correct Answer : Option D

68. In a transformer circuit it is possible to
- A) increase ac current
 - B) increase ac power
 - C) increase ac voltage
 - D) decrease ac current
 - E) decrease ac voltage

Correct Answer : Option B

- 69.** Identify the two electromagnetic waves A and B having respective wavelengths 2 cm and 580 nm
- A) A is microwave and B is visible light
 - B) A is infrared and B is ultraviolet ray
 - C) A is radio wave and B is visible light
 - D) A is infrared and B is visible light
 - E) A is radio wave and B ultraviolet ray

Correct Answer : Option A

- 70.** If a thin lens of focal length 20 cm is in contact with another lens of power 4 D, then the effective power of the combination is
- A) 9 D
 - B) 6 D
 - C) 5 D
 - D) 10 D
 - E) 11 D

Correct Answer : Option A

- 71.** The optical elements are matched with their optical phenomenon. The FALSE match is
- A) Optical fibre : Total internal reflection
 - B) Thin plastic sheets : Polarization
 - C) Glass prism : Dispersion
 - D) Concave mirror : Interference
 - E) Glass slab : Refraction

Correct Answer : Option D

- 72.** If the de Broglie wavelengths of proton p and alpha particle α are same, then
- A) both have same momentum
 - B) both have same energy
 - C) momentum of p is twice that of α
 - D) momentum of α is twice that of p
 - E) energy of p is twice that of α

Correct Answer : Option A

- 73.** Nucleons in nucleus are bound by
- A) electromagnetic forces
 - B) electrostatic forces

- C) long-range nuclear forces
- D) short-range nuclear forces
- E) gravitational forces

Correct Answer : Option D

74. The angular momentum and the energy of the electron in the second Bohr's orbit are respectively

- A) $\frac{h}{\pi}$ and -13.6 eV
- B) $\frac{2h}{\pi}$ and -1.5 eV
- C) $\frac{h}{\pi}$ and -3.4 eV
- D) $\frac{h}{2\pi}$ and - 3.4 eV
- E) $\frac{2h}{\pi}$ and -3.4 eV

Correct Answer : Option C

75. The INCORRECT statement is

- A) The lattice structure of Ge is called diamond like structure
- B) The number of electrons in the outermost orbit of Si is 4
- C) The energy band gap of semiconductors is less than 3 eV
- D) The number of free electrons is equal to number of holes in Ge
- E) The energy band gap of Ge is greater than 4 eV

Correct Answer : Option E