PROVISIONAL ANSWER KEY

Question Paper Code: 6/2026/OL

Exam:BPHARM 2026 -1

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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) $1.724 \times 10^{2}\ cm^{-1}$

B) $1.724 \times 10^{4}\ cm$

C) $1.724 \times 10^{3}\ cm^{-1}$

D) $1.724 \times 10^{3}\ cm$

E) $1.724 \times 10^{4}\ cm^{-1}$

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 kJ mol^{-1}

C) -236 kJ mol^{-1}

D) +246 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 $[H^+]$ of the solution? [pKw = 14]

A) 1×10^{-11} M

B) 1×10^{-13} M

C) 1×10^{-14} M

D) 1×10^{-3} M

E) 1×10^{-10} M

Correct Answer : Option A

15. K_C for the reaction $A_{(g)} + 2B_{(g)} \leftrightharpoons C_{(g)} + 2D_{(g)}$ is 4.0 at 300 K. What is the value of K'c for the reaction, $2C(g) + 4D(g) \leftrightharpoons 2A(g) + 4B(g)$ 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

18. The limiting molar conductance for aqueous solution of $CaCl_2$ at 298K is 271.6 S cm^2 mol^{-1}. If the limiting ionic conductance of Ca^{2+} ion at the same temperature is 119 S cm^2 mol^{-1} what is the limiting ionic conductance of Cl^- ion?

A) 152.6 S cm^2 mol^{-1}

B) 76.3 S cm^2 mol^{-1}

C) 135.8 S cm^2 mol^{-1}

D) 228.7 S cm^2 mol^{-1}

E) 114.35 S cm^2 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 mol^{-1} L s^{-1} and mol $L^{-1}s^{-1}$. 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 $[CoF_6]^{3-}$ 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
CH_3-CH_2-$CH(C_2H_5)$-CH_2-$CH(CH_3)$-CH_2-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

30. An organic compound is heated with Na_2O_2 then boiled with HNO_3. The solution is then 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) $CH_3OH + PCl_5 \rightarrow CH_3Cl + POCl_3 + HCl$

B) $2CH_3Cl + 2Na \rightarrow C_2H_6 + 2NaCl$

C) $CH_3Br + AgF \rightarrow CH_3F + AgBr$

D) $CH_3Cl + NaI \rightarrow CH_3I + NaCl$

E) $CH_3I + CH_3ONa \rightarrow CH_3\text{-}O\text{-}CH_3 + NaI$

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) $Pt\text{-}BaSO_4$

B) $ZnO\text{-}Cr_2O_3$

C) $Ni\text{-}Cr_2O_3$

D) $Pd\text{-}BaSO_4$

E) $CuO\text{-}Cr_2O_3$

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 Br_2 in CH_3COOH to get

A) *o*-bromoaniline

B) *p*-bromoaniline

C) *p*-bromoacetanilide

D) *o*-bromoacetanilide

E) *m*-bromoacetanilide

Correct Answer : Option C

44. Which among the following proteins are globular proteins?
(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 $\vec{F}$ and $\vec{S}$ is obtuse

E) negative if the angle between $\vec{F}$ and $\vec{S}$ 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 ^{0}C to 127 ^{0}C at constant volume is

A) 100 C_v

B) 50 C_v

C) 500 C_v

D) 300C_v

E) 200C_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

62. 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)

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

63. An isolated capacitor of capacitance 100 μF is charged to 32 C. If 16 C of charge is discharged from it, then its capacitance value is

A) 50 μF
B) 100 μF
C) 5 μF
D) 200 μF
E) 32 μF

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 -3.4eV

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