

Itemcode : **HC1001**

Q1: Based on quantum mechanical theory, the electronic configuration of Pd(Z=46) is

A $4d^9 5s^1$

B $4d^{10}$

C $4d^8 5s^1$

D $4d^{10} 5s^2$

Correct Ans: **B**

Itemcode : **HC1002**

Q2: Which particle among the following will have the smallest de Broglie wavelength, assuming that they have the same velocity?

A A positron

B A photon

C An α -particle

D A neutron

Correct Ans: **C**

Itemcode : **HC1003**

Q3: Which of the following processes causes the emission of X-ray?

A Alpha emission

B Gamma emission

C Positron emission

D Electron capture

Correct Ans: **D**

Itemcode : **HC1004**

Q4: Among of the following molecules, which is the most ionic?

A CaCl_2

B SnCl_2

C NaCl

D CuCl

Correct Ans: **C**

Itemcode : **HC1005**

Q5: Which of the following has a pyramidal shape?

A PCl_3

B	SO ₃
C	CO ₃ ⁻²
D	NO ₃ ⁻
Correct Ans: A	

<u>Itemcode</u> : HC1006	
Q6: Which of the following molecules is the most polar?	
A	CH ₃ NH ₂
B	(CH ₃) ₃ CCl
C	CH ₃ NO ₂
D	(CH ₃) ₃ CH
Correct Ans: C	

<u>Itemcode</u> : HC1007	
Q7: Real gases approach ideal gas behavior at	
A	low temperature and low pressure
B	low temperature and high pressure
C	high temperature and high pressure
D	high temperature and low pressure
Correct Ans: D	

<u>Itemcode</u> : HC1008	
Q8: Let p and p_s be the partial pressure and saturated partial pressure of water respectively. Then the relative humidity is given by	
A	$\frac{p_s+p}{p_s} \times 100$
B	$\frac{p}{p_s} \times 100$
C	$\frac{p_s}{p} \times 100$
D	$(p+p_s) \times 100$
Correct Ans: B	

<u>Itemcode</u> : HC1009	
Q9: Which of the following contains the greatest number of atoms?	
A	1.0 g of butane (C ₄ H ₁₀)
B	1.0 of nitrogen (N ₂)
C	1.0 g of silver (Ag)

D	1.0 of water (H ₂ O)
Correct Ans: A	

<u>Itemcode</u> : HC1010	
Q10: Surface tension does not vary with	
A	temperature
B	vapour pressure
C	the size of the surface
D	depend on the amount of wax
Correct Ans: C	

<u>Itemcode</u> : HC1011	
Q11: For laminar flow, all the particles of the liquid move parallel to the tube, and the velocity increases regularly from	
A	zero at the wall to maximum at the wall
B	zero at the wall to maximum at the centre
C	$-\infty$ at the wall to ∞ at the centre
D	∞ at the wall to $-\infty$ at the centre
Correct Ans: B	

<u>Itemcode</u> : HC1012	
Q12: The equivalent weight of Cr ₂ O ₇ ²⁻ in an acidic medium is	
A	M/2
B	M/3
C	M/9
D	M/6
Correct Ans: D	

<u>Itemcode</u> : HC1013	
Q13: Which of the following is the most strongly basic in water?	
A	CO ₃ ²⁻
B	ClO ₄ ⁻
C	NO ₃ ⁻
D	O ²⁻
Correct Ans: D	

<u>Itemcode</u> : HC1014	
Q14: The pH range of an indicator is given by	
A	pH = pK + 1

B	pH = pK - 1
C	pH = pK
D	pH = pK ± 1
Correct Ans: D	

<u>Itemcode</u> : HC1015	
Q15: In which of the following processes does the entropy decrease?	
A	The dissolving of sodium chloride in water
B	The evaporation of water
C	The conversion of CO ₂ (g) into dry ice
D	When a dozen marbles are taken out of a small bag and dropped on the ground
Correct Ans: C	

<u>Itemcode</u> : HC1016	
Q16: Predict the effect of a tenfold increase in pressure on the equilibrium composition of the reaction $3\text{N}_2(\text{g}) + \text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g}).$	
A	A thousandfold increase in K_x
B	A hundredfold increase in K_x
C	A tenfold decrease in K_x
D	A hundredfold decrease in K_x
Correct Ans: B	

<u>Itemcode</u> : HC1017	
Q17: In a particular reaction the time required to complete half of the reaction was found to increase 16 times when the initial concentration of the reactant was reduced to one-fourth. What is the order of the reaction?	
A	1
B	4
C	2
D	3
Correct Ans: D	

<u>Itemcode</u> : HC1018	
Q18: Which of the following concentrations has the largest degree of dissociation for a weak acid?	
A	1.0 M
B	0.5 M
C	0.10 M
D	0.01M
Correct Ans: D	

Itemcode : **HC1019**

Q19: The pH of 10^{-10} M H_2SO_4 will be almost

- A** 4
- B** 7
- C** 6
- D** 0

Correct Ans: **B**

Itemcode : **HC1020**

Q20: The pH at which a dipolar ion does not migrate from the anode to cathode in an electric field is called the

- A** isomeric point
- B** isoelectric point
- C** inflection point
- D** equivalence point

Correct Ans: **B**

Itemcode : **HC1021**

Q21: The effectiveness of a buffer is measured in terms of

- A** buffer action
- B** buffer capacity
- C** hydrolysis constant
- D** pK_a and pK_b

Correct Ans: **B**

Itemcode : **HC1022**

Q22: When mercuric iodide is added to an aqueous solution of KI, the

- A** freezing point is raised
- B** freezing point is lowered
- C** boiling point does not change
- D** freezing point does not change

Correct Ans: **A**

Itemcode : **HC1023**

Q23: The bond lengths and bond angles in molecules in the solid state are calculated by the X-ray diffraction technique because X-rays are scattered by

- A** electrons
- B** positrons
- C** protons
- D** neutrons

Correct Ans: **A**

Itemcode : **HC1024**

Q24: Which of the following pairs of molecules have the identical bond dissociation energies?

A F₂ and H₂

B N₂ and CO

C F₂ and I₂

D HF and O₂

Correct Ans: **C**

Itemcode : **HC1025**

Q25: The presence of phosphate interferes with the detection of

A Pb²⁺

B Ca²⁺

C Sn²⁺

D Bi³⁺

Correct Ans: **B**

Itemcode : **HC1026**

Q26: Among the following, which is the strongest nucleophile for an S_N2 reaction?

A H₂O

B RCO₂⁻

C OH⁻

D RO⁻

Correct Ans: **D**

Itemcode : **HC1027**

Q27: The effect of pressure on adsorption is high if

A Temperature is low

B Temperature is high

C Temperature is neither very low nor very high

D Charcoal piece is taken in place of charcoal powder

Correct Ans: **A**

Itemcode : **HC1028**

Q28: Which is adsorbed in maximum amount by activated charcoal?

A N₂

B CO₂

C	Cl ₂
D	O ₂
Correct Ans: B	

<u>Itemcode</u> : HC1029	
Q29: Purification of blood in the body is based upon the phenomenon of	
A	Electrophoresis
B	Electro-osmosis
C	Dialysis
D	Coagulation
Correct Ans: C	

<u>Itemcode</u> : HC1030	
Q30: Cow milk is an example of natural emulsion stabilized by	
A	Fat
B	Water
C	Casein
D	Mg ⁺⁺ ions
Correct Ans: C	

<u>Itemcode</u> : HC1031	
Q31: The catalyst used in Zeigler method for polymerization of ethylene is	
A	Cr ₂ O ₃ + Fe ₂ O ₃
B	Platinum
C	ZnO + CuO
D	TiCl ₄ + trialkyl aluminium
Correct Ans: D	

<u>Itemcode</u> : HC1032	
Q32: Refractory materials used in furnaces	
A	Resist high temperature
B	Become soft
C	Are oxidized
D	Melt on heating
Correct Ans: A	

<u>Itemcode</u> : HC1033	
Q33: Pure gold is	
A	18 Carat

B	22 Carat
C	14 Carat
D	24 Carat
Correct Ans: D	

<u>Itemcode</u> : HC1034	
Q34: Noble metals are soluble in	
A	NH ₄ OH
B	Aqua Regia
C	H ₂ SO ₄
D	Water gas
Correct Ans: B	

<u>Itemcode</u> : HC1035	
Q35: Which of the following fluorides <i>does not exist</i> ?	
A	NF ₅
B	PF ₅
C	AsF ₅
D	SbF ₅
Correct Ans: A	

<u>Itemcode</u> : HC1036	
Q36: The number of P-O-P bonds in cyclic metaphosphoric acid is	
A	Zero
B	Two
C	Three
D	Four
Correct Ans: C	

<u>Itemcode</u> : HC1037	
Q37: The most common oxidation state for selenium in its compounds with oxygen is	
A	+4
B	+2
C	- 2
D	+6
Correct Ans: A	

<u>Itemcode</u> : HC1038	
Q38: Which of the following compounds does not give oxygen on heating?	

A	HgO
B	KMnO ₄
C	(NH ₄) ₂ Cr ₂ O ₇
D	KClO ₃
Correct Ans: C	

<u>Itemcode</u> : HC1039	
Q39: The formula of ozone is O ₃ , it is	
A	An allotrope of oxygen
B	Compound of oxygen
C	Isotope of oxygen
D	Isomer of oxygen
Correct Ans: A	

<u>Itemcode</u> : HC1040	
Q40: Which of the following is used as a reagent in iodometric titrations?	
A	Na ₂ SO ₃
B	Na ₂ S ₂ O ₃ . 5 H ₂ O
C	Na ₂ SO ₄ . 10 H ₂ O
D	NaHSO ₃
Correct Ans: B	

<u>Itemcode</u> : HC1041	
Q41: When a lead storage battery is discharged	
A	SO ₂ is evolved
B	PbSO ₄ is consumed
C	Lead is formed
D	H ₂ SO ₄ is consumed
Correct Ans: D	

<u>Itemcode</u> : HC1042	
Q42: The T-shaped interhalogen compound is	
A	ClF ₃
B	ICl
C	ClF ₅
D	IF ₅
Correct Ans: A	

Itemcode : **HC1043**

Q43: Which of the following halogens has the highest bond energy?

A F₂

B Cl₂

C Br₂

D I₂

Correct Ans: **B**

Itemcode : **HC1044**

Q44: The first synthetic man made (transition) metal is

A Pm

B Tc

C Nb

D Zr

Correct Ans: **B**

Itemcode : **HC1045**

Q45: The most abundant transition metal is

A Zn

B Fe

C Hg

D Au

Correct Ans: **B**

Itemcode : **HC1046**

Q46: Which of the following transition metal cation has maximum unpaired electrons?

A Mn²⁺

B Fe²⁺

C Ni³⁺

D Cu⁺

Correct Ans: **A**

Itemcode : **HC1047**

Q47: Lanthanoid contraction implies

A Decrease in density

B Decrease in mass

C Decrease in ionic radii

D	Decrease in radioactivity
Correct Ans: C	

<u>Itemcode</u> : HC1048	
Q48: Which of the following ligands is a bidentate?	
A	EDTA
B	Ethylenediamine
C	Acetate
D	Pyridine
Correct Ans: B	

<u>Itemcode</u> : HC1049	
Q49: Which of the following cannot be prepared by direct halogenation of benzene?	
A	Iodobenzene
B	Chlorobenzene
C	Bromobenzene
D	Fluorobenzene
Correct Ans: D	

<u>Itemcode</u> : HC1050	
Q50: Which of the following alkyl halides is hydrolysed by S_N2 mechanism?	
A	$C_6H_5CH_2Br$
B	CH_3Br
C	$CH_2 = CHCH_2Br$
D	$(CH_3)_3CBr$
Correct Ans: B	

<u>Itemcode</u> : HC1051	
Q51: Iodoform is used in medicine as	
A	Antiseptic
B	Anaesthetic agent
C	Antipyretic
D	Antibiotic
Correct Ans: A	

<u>Itemcode</u> : HC1052	
Q52: The fire extinguisher 'pyrene' contains	
A	Carbon dioxide
B	Carbon disulphide

C	Carbon tetrachloride
D	Chloroform
Correct Ans: C	

<u>Itemcode</u> : HC1053	
Q53: Phenol is less acidic than	
A	ethanol
B	methanol
C	<i>o</i> -nitrophenol
D	<i>p</i> -methylphenol
Correct Ans: C	

<u>Itemcode</u> : HC1054	
Q54: Phenol on reduction with H ₂ in presence of nickel catalyst gives	
A	Benzene
B	Toluene
C	Cyclohexane
D	Cyclohexanol
Correct Ans: D	

<u>Itemcode</u> : HC1055	
Q55: Which of the following has the highest dipole moment?	
A	Aldehydes and ketones
B	Ethers
C	Carbon tetrachloride
D	Alcohols
Correct Ans: A	

<u>Itemcode</u> : HC1056	
Q56: Acetaldehyde and acetone differ in their reaction with	
A	sodium bisulphide
B	ammonia
C	phosphorus pentachloride
D	phenylhydrazine
Correct Ans: B	

<u>Itemcode</u> : HC1057	
Q57: Which carboxylic acid is most acidic?	
A	CH ₃ COOH

B	$(\text{CH}_3)_2\text{CHCOOH}$
C	$\text{C}_6\text{H}_5\text{COOH}$
D	HCOOH
Correct Ans: D	

<u>Itemcode</u> : HC1058	
Q58: Acetone on distillation with conc. H_2SO_4 forms	
A	phorone
B	acrolein
C	mesitylene
D	mesityle oxide
Correct Ans: C	

<u>Itemcode</u> : HC1059	
Q59: Which of the following is the strongest base in aqueous solution?	
A	Methylamine
B	Trimethylamine
C	Aniline
D	Dimethylamine
Correct Ans: D	

<u>Itemcode</u> : HC1060	
Q60: Molisch test is answered by	
A	All carbohydrates
B	Sucrose
C	Fructose
D	Glucose
Correct Ans: A	

<u>Itemcode</u> : HC1061	
Q61: Proteins are	
A	Polyamides
B	Polyesters
C	Polyhydric alcohols
D	Polycarboxylic acids
Correct Ans: A	

<u>Itemcode</u> : HC1062	
Q62: Enzymes are	

A	Carbohydrates
B	Nucleic acids
C	Globular proteins
D	Fibrous proteins
Correct Ans: C	

<u>Itemcode</u> : HC1063	
Q63: Which of the following constitutes the genetic material of the cell?	
A	Nucleic acids
B	Proteins
C	Lipids
D	Carbohydrates
Correct Ans: A	

<u>Itemcode</u> : HC1064	
Q64: Which of the following is not a pyrimidine?	
A	Uracil
B	Guanine
C	Cytosine
D	Thymine
Correct Ans: B	

<u>Itemcode</u> : HC1065	
Q65: Mark the incorrect statement about ATP	
A	It is a nucleotide
B	It contains the purine adenine
C	The enzyme catalyzed hydrolysis of ATP to ADP and AMP is accompanied by absorption of energy
D	Energy is stored in the cell in form of ATP
Correct Ans: C	

<u>Itemcode</u> : HC1066	
Q66: Vitamin D is called	
A	Ascorbic acid
B	Calciferol or ergocalciferol
C	Thiamine
D	Riboflavin
Correct Ans: B	

<u>Itemcode</u> : HC1067	
---------------------------------	--

Q67: Which of the following biomolecules contains a non-transition metal ion?

A Haemoglobin

B Chlorophyll

C Insulin

D Vitamin B₁₂

Correct Ans: **B**

Itemcode : **HC1068**

Q68: Deficiency of vitamin E causes

A Sterility

B Rickets

C Beri-beri

D Scurvy

Correct Ans: **A**

Itemcode : **HC1069**

Q69: The sex hormone which controls the development and maintenance of pregnancy is

A Cortisone

B Thyroxine

C Progesterone

D Estrone

Correct Ans: **C**

Itemcode : **HC1070**

Q70: Which of the following is not a wax?

A Myricyl palmitate

B Tripalmitin

C Myricyl cerotate

D Cetyl palmitate

Correct Ans: **B**

Itemcode : **HC1071**

Q71: Candles are made by using

A Bees wax and stearic acid

B Paraffin wax and stearic acid

C Bees wax and paraffin wax

D Bees wax, paraffin wax and stearic acid

Correct Ans: **B**

Itemcode : **HC1072**

Q72: Which of the following vitamins is water soluble?

- A** Vitamin E
- B** Vitamin K
- C** Vitamin A
- D** Vitamin B

Correct Ans: **D**

Itemcode : **HC1073**

Q73: Which of the following contains cobalt?

- A** Vitamin B₁₂
- B** Vitamin A
- C** Vitamin C
- D** Vitamin K

Correct Ans: **A**

Itemcode : **HC1074**

Q74: α -D(+)-glucose and β -D(+)-glucose are

- A** enantiomers
- B** conformers
- C** epimers
- D** anomers

Correct Ans: **D**

Itemcode : **HC1075**

Q75: To make PVC a flexible plastic, the additive used is called

- A** Filler
- B** Antioxidant
- C** Stabilizer
- D** Plasticizer

Correct Ans: **D**

Itemcode : **HC1076**

Q76: Which of the following polymers is chemically least reactive and thermally most stable?

- A** Saran
- B** Teflon
- C** Orlon
- D**

	chloroprene
Correct Ans: B	

<u>Itemcode</u> : HC1077	
Q77: Anti-allergy drugs are called	
A	antimicrobials
B	antihistamines
C	antivirals
D	antifungals
Correct Ans: B	

<u>Itemcode</u> : HC1078	
Q78: The antibiotic used for curing tuberculosis is	
A	Penicillin
B	Streptomycin
C	Tetracycline
D	Chloromycetin
Correct Ans: B	

<u>Itemcode</u> : HC1079	
Q79: Which of the following does not behave as a surfactant?	
A	Soap
B	Detergent
C	Phospholipid
D	Triglycerides
Correct Ans: D	

<u>Itemcode</u> : HC1080	
Q80: The most widely used analgesic in severe pain is	
A	aspirin
B	phenacetin
C	paracetamol
D	morphine
Correct Ans: D	

<u>Itemcode</u> : HC1081	
Q81: Which mountain range separates Spiti from Tibet?	
A	Dhauladhar
B	Pir Panjal

C	The Great Himalayan Range
D	Zaskar
Correct Ans: D	

<u>Itemcode</u> : HC1082	
Q82: Who is the author of Himalayan Circuit ?	
A	K.L. Joshi
B	G.D. Khosla
C	H.K. Mittoo
D	R.K. Kaushal
Correct Ans: B	

<u>Itemcode</u> : HC1083	
Q83: Kopra water spring is near _____.	
A	Nurpur
B	Nadaun
C	Sujanpur
D	Deot Sidh
Correct Ans: B	

<u>Itemcode</u> : HC1084	
Q84: In which district of H.P. is Deo Tibba mountain peak?	
A	Sirmour
B	Solan
C	Kinnaur
D	Kullu
Correct Ans: D	

<u>Itemcode</u> : HC1085	
Q85: Which village in the lap of Dhauladhar is known as 'Little Israel' or 'Tel Aviv of hills'?	
A	Dharamkot
B	Dungka
C	Shahkot
D	Dhankar
Correct Ans: A	

<u>Itemcode</u> : HC1086	
Q86: Trigarta country refer to the land that lies between the Satluj and the _____.	
A	Beas

B	Ravi
C	Chenab
D	Pabbar
Correct Ans: B	

<u>Itemcode</u> : HC1087	
Q87: How many Parganas of Baghat princely State were taken over by the British after the Nepalese war and sold to the raja of Patiala?	
A	Five
B	Seven
C	Nine
D	Eleven
Correct Ans: A	

<u>Itemcode</u> : HC1088	
Q88: Where is Ki-Monastery?	
A	Kullu
B	Kinnaur
C	Lahaul
D	Spiti
Correct Ans: D	

<u>Itemcode</u> : HC1089	
Q89: Which raja of Sirmour District of H.P. laid the foundation of Nahan city?	
A	Budhi Parkash
B	Pratap Parkash
C	Karam Parkash
D	Fateh Parkash
Correct Ans: C	

<u>Itemcode</u> : HC1090	
Q90: Which one of the following is a painting by Nicholas Roerich?	
A	The city of the Serpent
B	Mother and Child
C	Young Girls
D	Notre Dame
Correct Ans: A	

<u>Itemcode</u> : HC1091	
Q91: What is the Capital of United Arab Emirates (UAE)?	

A	Pretoria
B	Riyadh
C	Juba
D	Abu Dhabi
Correct Ans: D	

<u>Itemcode</u> : HC1092	
Q92: Who directed the movie Aparajito ?	
A	Mrinal Sen
B	Girish Karnad
C	Satyajit Ray
D	Mani Kaul
Correct Ans: C	

<u>Itemcode</u> : HC1093	
Q93: In which year was Chandigarh made a Union Territory?	
A	1956
B	1963
C	1966
D	1971
Correct Ans: C	

<u>Itemcode</u> : HC1094	
Q94: World Environment Day is celebrated on _____.	
A	July 17
B	June 21
C	June 5
D	July 21
Correct Ans: C	

<u>Itemcode</u> : HC1095	
Q95: What is the Samadhi of Lal Bahadur Shastri called?	
A	Shantivan
B	Kisan Ghat
C	Samta sthal
D	Vijay Ghat
Correct Ans: D	

Itemcode : **HC1096**

Q96: Who was given the 2019 Padma Vibhushan?

- | | |
|----------|-----------------|
| A | Bhupen Hazarika |
| B | Nanaji Deshmukh |
| C | Teejan Bai |
| D | Kariya Munda |

Correct Ans: **C**

Itemcode : **HC1097**

Q97: Who invented a replacement of Plastic?

- | | |
|----------|-----------------|
| A | Sharon Barak |
| B | Sally Ride |
| C | Bob Dyalan |
| D | Boris Pasternak |

Correct Ans: **A**

Itemcode : **HC1098**

Q98: Among the following which is the largest desert in the World?

- | | |
|----------|----------------|
| A | Kalahari |
| B | Thar |
| C | Great Victoria |
| D | Sahara |

Correct Ans: **D**

Itemcode : **HC1099**

Q99: To which country does Peter Handke, who won the 2019 Nobel prize for literature, belong?

- | | |
|----------|-----------|
| A | Hungary |
| B | Austria |
| C | Belgium |
| D | Australia |

Correct Ans: **B**

Itemcode : **HC1100**

Q100: To the produce of which food item does yellow revolution refer?

- | | |
|----------|----------|
| A | Potato |
| B | Meat |
| C | Egg |
| D | Oilseeds |

Correct Ans: **D**

