CHEMISTRY, PAPER-I

(a) Calamine



FEDERAL PUBLIC SERVICE COMMISSION COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BPS-17 UNDER THE FEDERAL GOVERNMENT, 2010

Roll Number

CHEMISTRY, PAPER-I

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TIME A	ALLOW	H'110 - /		NUTES URS & 30 MI	NUTES			MARKS:20 MARKS:80			
NOTE	E: (i) I	First attempt PART-	-I (MC	CQ) on separat	e Answ	er Sheet wh	nich shall be	taken back			
		after 30 minutes.			_						
		Overwriting/cutting			vers wi	ll not be giv	en credit.				
	(iii) S	Scientific calculator	is allo	owed							
			_	PART – I (N COMPULS							
Q.1.	Select t	he best option/answ	ver an	d fill in the ap	propri	ate box on t	he Answer S	Sheet. (20)			
(i)	When a	n electron is brought	t from	infinite distan	ce close	to the nucl	eus of the ato	om, the energy			
. ,	When an electron is brought from infinite distance close to the nucleus of the atom, the energy Electron-nucleus system?										
		creases to a smaller r	negativ	ve value (b) deci	eases to a g	reater negativ	ve value			
	(c) de	ecreases to a smaller	positiv	ve value (d) incr	eases to a gi	reater positiv	e value			
(ii)	The probability of finding the electron in the nucleus is:										
	(a) 100% due to forces of attraction (b) finite for all orbitals										
	(c) Zero for all orbitals (d) Zero for some orbitals and finite for o							nite for others			
(iii)	When Zn metal is kept in CuSO ₄ solution, copper is precipitated and ZnSO ₄ is formed because:										
	(a) Atomic number of Zinc is smaller than copper										
	(b) At	tomic number of Zin-	c is la	ger than copp	er						
	(c) Standard reduction potential of Zinc is more than that of copper										
	(d) Standard reduction potential of Zinc is less than that of copper										
(iv)	Electrolytes when dissolved in water, dissociate into their constituent ions, the degree										
,	dissociation of an electrolyte increases with the:										
	(a) Presence of a substance yielding common ion										
	(b) Decreasing temperature										
	(c) Decreasing concentration of electrolyte										
	(d) Increasing concentration of electrolyte										
(v)	There is a large positive entropy change for an exothermic reaction. It means that the react										
` /	will be:										
	(a) po	ssible at high temper	ratures	only (b) imp	ossible at al	l temperature	s			
	(c) possible at low temperatures only (d) possible at all temperatures										
(vi)		of the following state			, 1		1				
` /	(a) the temperature of the system will fall if an exothermic reaction is isolated from										
	surroundings										
	(b) Energy is absorbed when one compound is converted into another with higher heat content										
	(c) the temperature of the system is likely to fall if heat is absorbed during the course of										
		action	-	-							
	(d) No	one of these									
(vii) (viii)		bond is stronge	est in:								
	(a) \overline{S}	<u>-H</u> O (b)	О-Н	S (c) F-H	O	(d)	F-HS			
		water contains:		`			` /				
		arge amount of salts	(b)	Deuterium	(c)	O^{18}	(d)	O^{16}			
(ix)		OH of a solution is:	` '		()		()				
	(a) 7		(b)	Zero	(c)	14	(d)	-14			
(x)		npound that is not Le			()		()				
	(a) Bl		(b)	BaCl ₂	(c)	SnCl ₄	(d)	AlCl ₃			
(xi)		st acid having K _a :	(~)		(-)		(-)	J			
()	(a) 10		(b)	10^{-4}	(c)	1	(d)	10^{-2}			
(xii)	. /	Aluminium:	(5)	- •	(0)	-	(4)	- 0			
()	(-)	1	(1-)	D-1	(-)	Di4-	(L)	T :			

(b) Dolomite

(c) Bauxite

(d) Limestone

(xi) Oxtodation number of S in suppurie acid: (a) Four (b) Six (c) Two (d) Eight (d) block elements form coordination compounds because of: (a) Small Cationic size (c) Unfilled d-orbitals (d) Filled d-orbitals (xi) Brass is an alloy of: (a) Cu and Zn (b) Cu, Ni, Zn (c) Cu and Ni (d) Cu, Al, Zn (xvi) Urea is a high quality nitrogenous fertilizer with: (a) 76% nitrogen (b) 46% nitrogen (c) 66% nitrogen (d) 26% nitrogen (xvii) Diamond is: (a) Good conductor of electricity (b) Bad conductor of electricity (c) Bad conductor on heating (d) Good conductor on heating (xviii) Carbon monoxide is poisonous gas because it: (a) replaces oxygen from lungs (b) forms carboxy haemoglobin (xi) Rust is: (a) FeO+Fe(OH) ₂ (b) Fe ₂ O ₃ +Fe(OH) ₂ (c) Fe ₂ O ₃ (d) Fe ₂ O ₃ +Fe(OH) ₃ (xx) Calcium Carbide reacts with water to give: (a) Methane (b) Ethylene (c) Acetylene (d) Ethane PART—II (ii) PART-II is to be attempted on the separate Answer Book. (iii) Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL marks. (iii) Extra attempt of any question or any part of the attempted question will not be considered. (b) An atom of Helium is moving in one Dimensional box of width 10 ² m. Calculate the energy difference between second and third energy level. (b) Calculate the p41 of a buffer solution by potentiometric method using: (i) Hydrogen Electrode (ii) Atlabatic (iii) Isochoric (iv) Isobaric (b) How do you measure the pH of a solution by potentiometric method using: (b) Hydrogen Electrode (c) Indiabatic (iii) Isochoric (iv) Isobaric (b) How the pressure, temperature and volume of a gas are related to each other in adiabatic process: (b) Isothermal (ii) Adiabatic (iii) Isochoric (iv) Isobaric (b) How the pressure, temperature and volume of a gas are related to each other in adiabatic process: (c) I mole of an ideal gas at 25°c is allowed to expand reversibly at constant temperature from 15dm² to 30dm² calculate the work done by gas: (c) Finist major sources for air pollution. (d) Whish		ISTRY, PAPER-I									
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