## JEE Main 2025 Chemistry Live Quiz Practice Test - 5

1.	A thermodynamics system is said to be an isolated system provided : (A) Matter can be added and not heat										
	<ul> <li>(A) France can be added out not the matter</li> <li>(B) Heat can be added but not the matter</li> <li>(C) Both matter and heat can be added or removed</li> <li>(D) Both matter and heat cannot be added or removed</li> </ul>										
2.	Which (A)	n of the followir Heat capacity	ng is an in 7 <b>(B)</b>	ntensive prope Enthalpy	erty of a sys (C)	tem ? Surface tens	sion (D)	Volume	[30 sec]		
3.	The w of the (A)	ork done on ga gaseous system 8 J	seous sys i is : ( <b>B</b> )	stem is 12 J ar 32 J	nd also 20 J (C)	of heat is add	led to it. T (D)	he change in in 20 J	ternal energy [45 sec]		
4.	Two moles of ideal gas undergoes isothermal reversible compression from $20 \text{ dm}^3$ to $5 \text{ dm}^3$ at a work involved in this process is : (Given $\log 2 = 0.301$ )								t 300 K. The [60 sec]		
	(A)	-6.92 kJ	<b>(B)</b>	6.92 kJ	(C)	-3.46 kJ	<b>(D)</b>	3.46 kJ			
5.	An id pressu entire (A) (C)	The early and the expansion from the volume $V_1$ to $V_2$ against a contrast of the subjected to isothermal reversible compression till it attains its original cyclic process, which of the following facts hold good? $\Delta U = 0 \text{ and } w = 0 \qquad (B) \qquad \Delta U = 0 \text{ and } w > 0$ $\Delta U = 0 \text{ and } w < 0 \qquad (D) \qquad \Delta U > 0 \text{ and } w > 0$					against a cons ns its original s	tant external state. For the [60 sec]			
6.	If an i of the	If an ideal gas undergoes adiabatic reversible change of state from $(p_1, V_1, T_1)$ to $(p_2, V_2, T_2)$ , then which of the following statements is correct?									
6.	(A) (C)	$p_1 V_1 = p_2 V_2$ $p_1 / T_1 = p_2 /$	T <sub>2</sub>		(B) (D)	$p_1 V_1^{\gamma} = p_2 V$ $V_1 / T_1 = V_2$	γ <sup>γ</sup> / T <sub>2</sub>				
7.	If T <sub>2</sub> expans	and $T'_2$ are the sions from the v	respectiv volume V	we final temper $V_1$ to $V_2$ , whi	ratures of a ch of the fo	gas undergoin llowing facts	ng adiabat holds good	ic reversible and 1 :	d irreversible [60 sec]		
	(A)	$T_2 > T_2'$	<b>(B)</b>	$T_2 < T_2'$	(C)	$T_2 = T_2'$	<b>(D)</b>	$V_1T_1^\gamma=V_1T_2^\gamma$			
8.	Which (A) (B) (C) (D)	n of the followin First law of th Work done by Vibrational co q <sub>p</sub> and q <sub>V</sub> a	ng statem hermodyn y an idea ontributio re state f	ents is not con namics is also l gas undergoi on to heat capa unctions	rect ? known as l ing expansio acity of a ga	aw of conserv on against vac aseous molecu	ration of er cuum is zer iles is effe	nergy ro ctive at low tem	[60 sec]		

9.	A process will be spontaneous at all temperatures if :									
	(A)	$\Delta H < 0$ and $\Delta S > 0$				$\Delta H > 0$ and $\Delta S < 0$				
	(C)	$\Delta H < 0$ and $\Delta H$	$\Delta S < 0$		<b>(D)</b>	$\Delta H > 0 a$	and $\Delta S > 0$			
10.	Two the end	moles of an id nthalpy change	leal gas i (in kJ) fo	s expanded isoth r the process is :	nermally	y and reven	rsibly from 1	litre to 10	litre at 300 K. [60 sec]	
	(A)	11.4 kJ	<b>(B)</b>	-11.4kJ	(C)	0 kJ	(D)	4.8kJ		
11.	A piston filled with 0.04 mole of an ideal gas expands reversibly from 50.0 mL to temperature of 37°C. As it does so, it absorbs 208 J of heat. The values of q and W $=$ (R = 8.314 J/mol K, ln 7.5 = 2.01) (A) q = +208J, W = -208J (B) q = -208J, W = -208J					mL to 375 m ad W for the p 8J	L at a constant rocess will be : [60 sec]			
	(C)	q = -208J,	w = +200	5J	(D)	q = +20	$\delta J, W = +20$	0J		
12.	ΔU i	s equal to :							[60 sec]	
	(A)	Isothermal work				Isochoric	e work			
	(C)	Isobaric worl	k		<b>(D)</b>	Adiabati	c work			
13.	For t	For the process : $H_2O(l)(1bar, 373K) \rightarrow H_2O(g)(1bar, 373K)$ , the correct set of thermodynamic								
	parameters is :									
	(A)	$\Delta G = 0, \Delta S = + ve$				$\Delta G=0,$	$\Delta S = -ve$			
	(C)	$\Delta G = + ve, \Delta$	$\Delta S = 0$		<b>(D)</b>	$\Delta G = -\frac{1}{2}$	ve, $\Delta S = +$ ve	;		
14.	1 mole of a monoatomic ideal gas at T K undergoes adiabatic expansion under a constant extern of 1 atm from 1 L to 2 L. The final temperature (in K) would be :									
	(A)	$\frac{\mathrm{T}}{\mathrm{2}^{2/3}}$	<b>(B)</b>	$T + \frac{2}{3 \times 0.0821}$	(C)	Т	<b>(D)</b>	$T - \frac{2}{3 \times 0.07}$	821	
15.	Whicl	h of the followi	ng lines o	correctly show th	e tempe	erature depo	endence of ec	uilibrium cor	nstant K, for an	

15. Which of the following lines correctly show the temperature dependence of equilibrium constant K, for an exothermic reaction? [120 sec]



(A)

## Answer

1	2	3	4	5	6	7	8
D	С	В	В	В	В	В	С
9	10	11	12	13	14	15	
А	С	А	D	А	D	С	