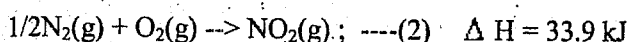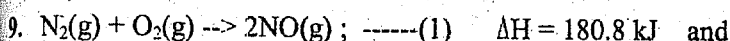**Answer Guide Assignment Test II- CHU 1221 - 2006/07**

1. Correct answer is **(2)**.

2. You should know the difference between a state property and a path property. Correct answer is **(1)**.

3. Intensive properties do not depend on the amount of substance whereas extensive properties do. Correct answer is **(4)**.

4. Molecules need not carry the same kinetic energy. Correct answer is **(4)**.

5. Van der Waal equation is for real gases where there are attractive forces between gas molecules. Correct answer is **(5)**.

6. Heavier molecules have lower molecular speeds and narrower spread of speeds. Correct answer is **(3)**

7. Standard enthalpy is defined for the standard state. For sodium it is Na(s). Correct answer is **(3)**

8. Correct answer is **(1)**

9. $N_2(g) + O_2(g) \to 2NO(g)$; ------(1) $\Delta H = 180.8$ kJ   and

   $1/2 N_2(g) + O_2(g) \to NO_2(g)$; ----(2) $\Delta H = 33.9$ kJ

   To get equation, $NO(g) + 1/2 O_2(g) \to NO_2(g)$, $2 \times (2) - (1)$ where $\Delta H = (33.9 \times 2) - 180$ kJ $= -1130$ kJ therefore for $NO(g) + 1/2 O_2(g) \to NO_2(g)$ $\Delta H = -56.5$ kJ. Correct answer is **(3)**

10. Correct answer is **(3)**

11. Real gases approximate ideal gases at high temperatures and low pressures. Correct answer is **(3)**

12. In equation 5 two mols of the gas gives three mols of the other gases. Correct answer is **(5)**

13. Correct answer is **(5)**. Note that ΔE refers to internal energy.

14. The heat capacity of 1 g of a substance is called its specific heat. So you have to divide the molar heat capacity by the molar mass of sodium chloride. Correct answer is **(3)**

15. You have to be mindful about the sign convention. Correct answer is **(5)**.

16. **dq = du + pdv** . Be mindful of the sign convention. Correct answer is **(4)**

17. Correct answer is **(5)**

18. Correct answer is **(2)**

19. Correct answer is **(2)**

20. Correct answer is **(5)**

21. Correct answer is **(4)**

22. Correct answer is **(5)**

23. You have to know the definition of the critical temperature. Correct answer is (2)

24. Entropy refers to disorder. In eq 5 three gas molecules are formed. Correct answer is (5)

25. correct answer is (3)

26. correct answer is (1)

27. You have to do a calculation taking into account the number of bond that are formed and the number of bonds that are broken. Ans. – 488 kJ. Error.

28. Note that this is a spontaneous reaction and the product is a gas. Correct answer is (3).

29. An elementary reaction is a one step reaction. Correct answer is (3)

30. correct answer is (4)

31. There was no correct response in the Tamil medium Q. paper.

32. Note that T is constant. Correct answer is (5)

33. Correct answer is (2)

34. Correct answer is (3)

35. Rate of reactants will decrease and the rate of products will increase. Correct answer is (3)

36. Rate determining step is the slowest step. Correct answer is (1)

37. Catalyst can increase or decrease the rate. Correct answer is (3)

38. Correct answer is (3)

39. Correct answer is (5)

40. Rate refers to the change in concentration with time. If the concentration becomes less with time the rate will decrease. Effectiveness of the collisions refers to the formation of a product. Correct answer is (3)