

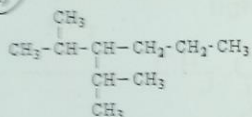
This Exam Booklet contains (15.) different pages

Part one (20 Points)

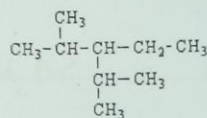
1-

Which of the following compounds is 2-methyl-3-(1-methylethyl)hexane?

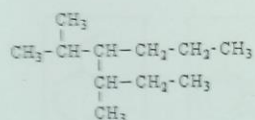
(a)



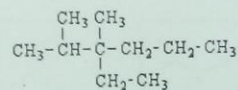
(b)



(c)



(d)

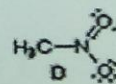
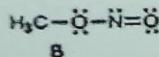
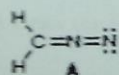


2-Which of the following molecules and ions are electrophilic?

a-CH₄ b-H₂O c-Br⁽⁺⁾ d-BF₃ e-NH₃ f-NO₂⁽⁺⁾ g-Br⁽⁻⁾

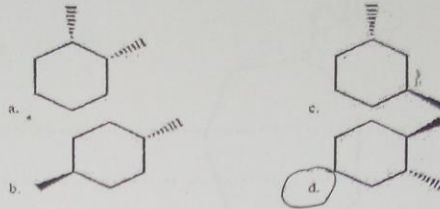
..... c.....d.....f.....

3- Which structures satisfy the following conditions?

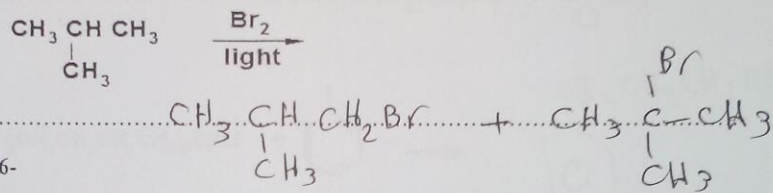


a-No formally charged atoms are present in the structures. **B**
 b-At least one nitrogen has a (+) formal charge... **A...C...D**
 c- At least one oxygen has a (+) formal charge.... **C.....**
 d-At least one nitrogen has a (-) formal charge.... **A.....**

4-Which of the following molecules is trans-1,2-dimethylcyclohexane?

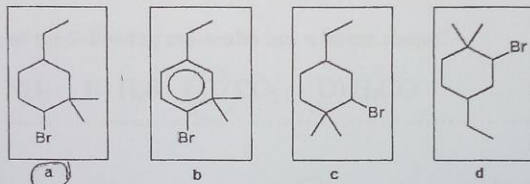


5-

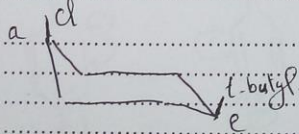


6-

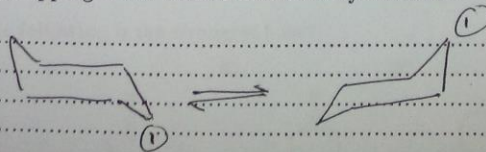
Choose 1-bromo-4-ethyl-2,2-dimethylcyclohexane



7-Draw the most stable conformation of cis 1-chloro-4-t-butylcyclohexane.



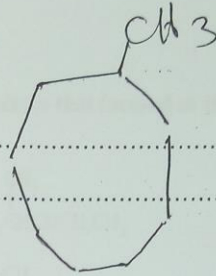
8-Draw the Flipping Chair Conformations of cyclohexane.



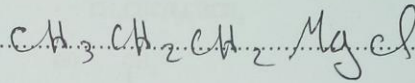
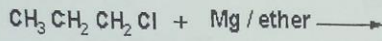
9- methyl (CH₃) group attached to an 8-carbon alkane ring?

- a-boric acid
- b-cyclooctanol
- c-methylcyclooctane
- d-cyclooctene

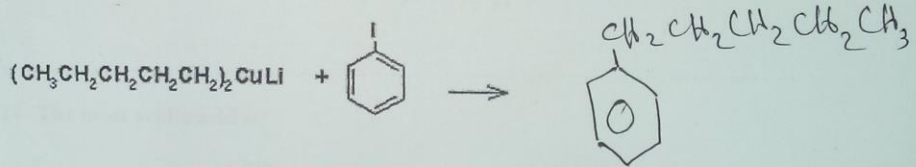
Draw the structure.....



10-



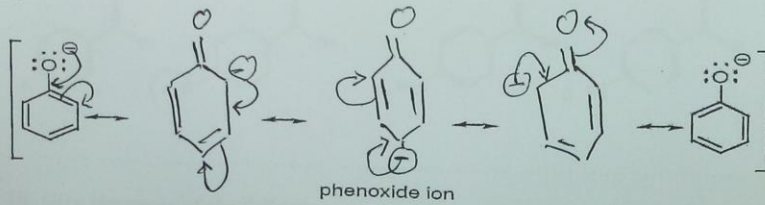
11-



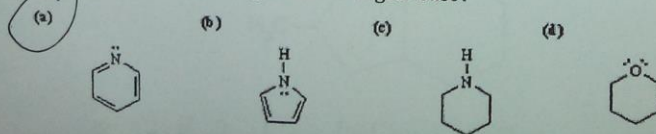
12--Which of the following molecules has a linear shape?

- A) NH₃
- B) H₂S
- C) CO₂
- D) H₂CO

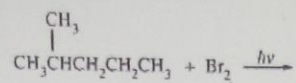
13-



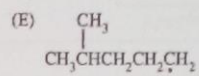
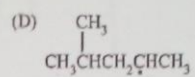
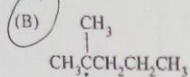
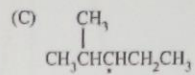
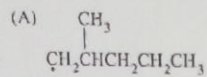
14-Which of the following is the strongest base?



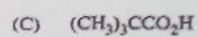
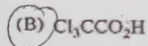
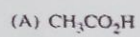
15-



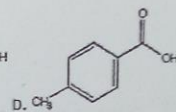
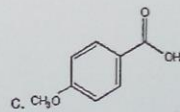
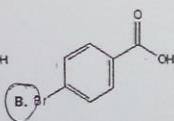
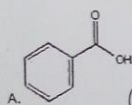
In the reaction shown above, the intermediate that formed at the fastest rate is which of the following?



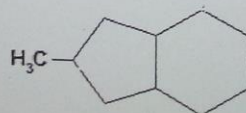
16- The most acidic acid is:



17- Which acid has lowest pKa?



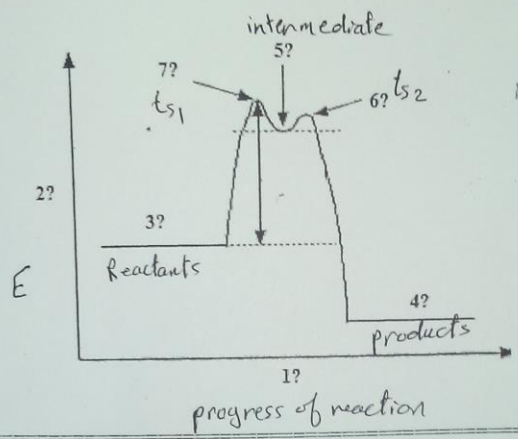
18- Give the name of the following:



.....8-methyl bicyclo [4, 3, 0] nonane.....

Q # II: Complete the following cases:
Marks)
1)

19- The Figure illustrated..... Energy..... profiles..... for..... S_N1 reaction



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