

JEE-ADVANCE-2014-P1-Model

Time: 09:00 AM to 12:00 Noon

IMPORTANT INSTRUCTIONS

Max Marks: 180

PHYSICS:

| Section | Question Type | +Ve Marks | - Ve Marks | No.of Qs | Total marks |
|-------------------------|--|--------------|---------------|-------------|----------------|
| Sec – I(Q.N : 1 – 10) | Questions with Multiple Correct Choice | 3 | 0 | 10 | 30 |
| Sec – II(Q.N : 11 – 20) | Questions with Integer Answer Type | 3 | 0 | 10 | 30 |
| Total | | | | 20 | 60 |

CHEMISTRY:

| Section | Question Type | +Ve Marks | - Ve Marks | No.of Qs | Total marks |
|-------------------------|--|--------------|---------------|-------------|----------------|
| Sec – I(Q.N : 21 – 30) | Questions with Multiple Correct Choice | 3 | 0 | 10 | 30 |
| Sec – II(Q.N : 31 – 40) | Questions with Integer Answer Type | 3 | 0 | 10 | 30 |
| Total | | | | 20 | 60 |

MATHEMATICS:

| Section | Question Type | +Ve Marks | - Ve Marks | No.of Qs | Total marks |
|-------------------------|--|--------------|---------------|-------------|----------------|
| Sec – I(Q.N : 41 – 50) | Questions with Multiple Correct Choice | 3 | 0 | 10 | 30 |
| Sec – II(Q.N : 51 – 60) | Questions with Integer Answer Type | 3 | 0 | 10 | 30 |
| Total | | | | 20 | 60 |

Sec: Sr.IPLCO

space for rough work

2

PART-II_CHEMISTRY

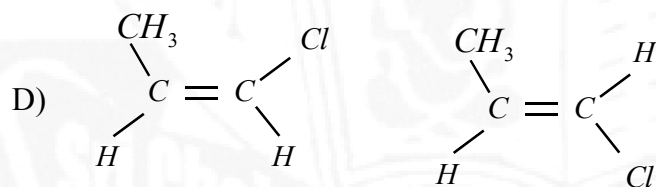
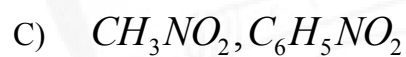
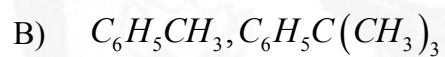
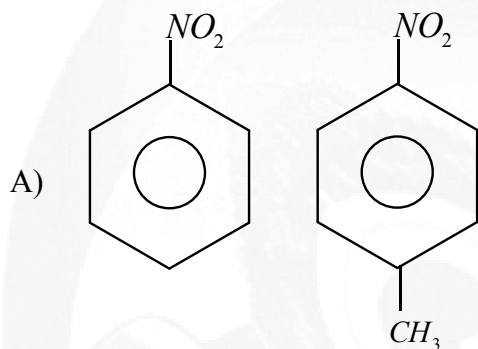
Max Marks : 60

Section-1

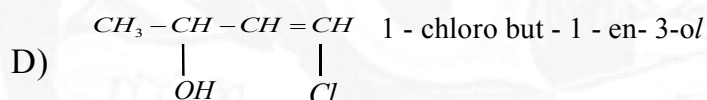
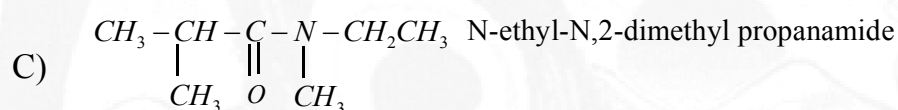
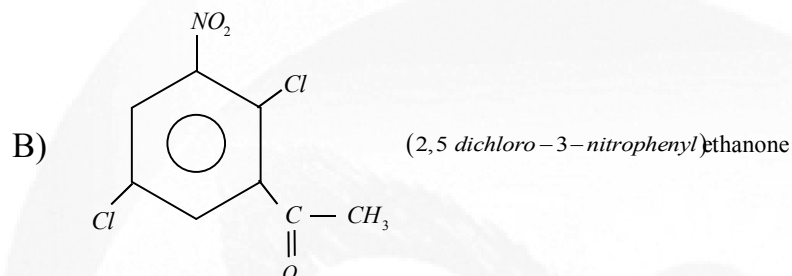
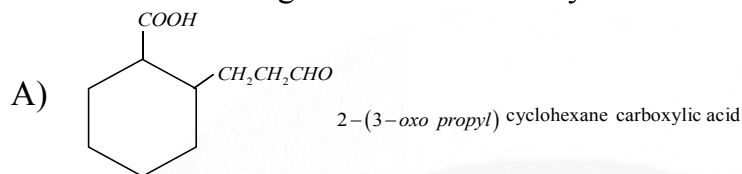
(One or More options Correct Type)

This section contains 10 multiple choice questions. Each question has four choices (A) (B) (C) and (D) out of which **ONE or MORE** are correct.

21. In which of the following the second one has higher dipole moment than the first one?



22. The IUPAC names given are correct only in some cases. Identify them



23. In the following pairs of compounds given- the former is stronger acid than the second one given in some cases. Identify such pairs?

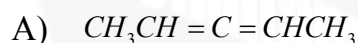
A) 3-oxo butanal, pentane-2,4-dione

B) picric acid, nitro acetic acid

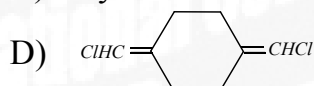
C) Fumaric acid, maleic acid

D) O-nitro phenol p-nitrophenol

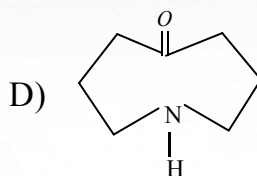
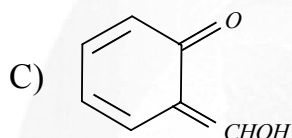
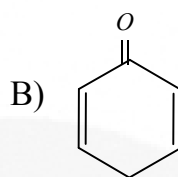
24. How many of the following exhibit geometrical isomerism?



B) Cyclooctene



25. Identify those which exhibit tautomerism



26. Aceto acetic ester $CH_3COCH_2COOC_2H_5$ exhibits keto-enol tautomerism. Which of the following properties it exhibits?

A) It gives an oxime

B) It decolorises Br_2/H_2O

C) It releases H_2 with Na

D) It is reduced to B-hydroxy ethyl butyrate with $NaBH_4$

27. Which of the following statements are correct regarding hyperconjugation

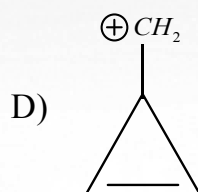
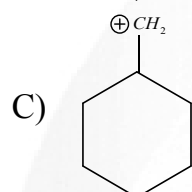
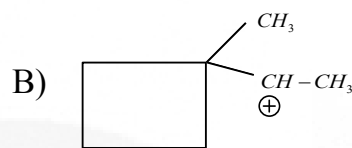
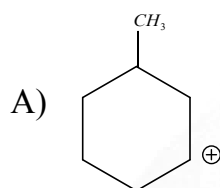
A) It involves $\alpha-C-H$ σ bond pair in the formation of π bond

B) It is no bond resonance

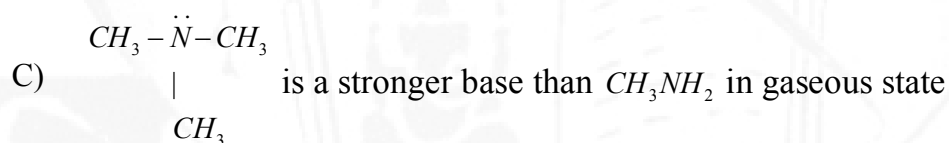
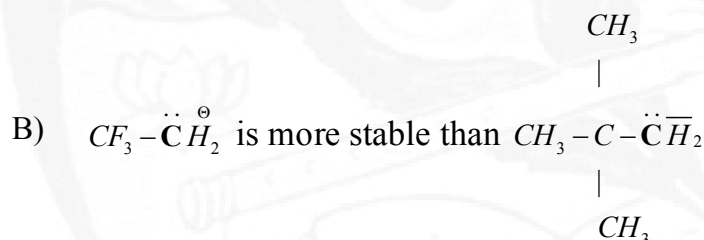
C) It is called Baker-Nathan effect

D) It is more predominating than resonance

28. Which of the following carbocations can undergo rearrangement or ring expansion?



29. Which of the following statements are correct?



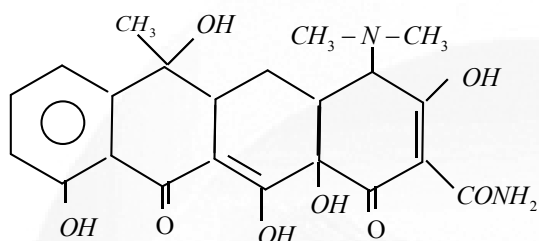
D) Methyl carbanion is planar

30. Which of the following are more reactive than benzene towards electrophilic substitution?

A) nitrobenzene B) $\text{C}_6\text{H}_5\text{CCl}_3$ C) Phenol D) aniline

Section-2
(Integer Value Correct Type)

This section contains 10 questions. The answer to each question is a **single digit integer, ranging** from 0 to 9 (both inclusive).



31.

This is the structure of tetracycline. How many chiral centres it has?

32. How many of the following are stronger bases than aniline?

O- methoxy aniline, O- toluidine, m-methoxy aniline, O- phenylene diamine, benzyl amine, p-toluidine, p-methoxy aniline

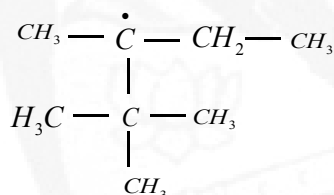
33. How many of the following are stronger acids than benzoic acid ?

p-toluic acid, p-hydroxy benzoic acid, acetic acid, formic acid, salicylic acid , phthalic acid,
maleic acid

34. The number of isomers with the formula C_4H_6 are

35. The number of resonating structures in which protonated aniline can exist is

36. The number of resonating structures the intermediate carbocation formed (excluding it) can have, when chloronium ion is introduced in the orthoposition of toluene is (including no bond resonating structures)
37. The number of nucleophiles whose nucleophilicity is greater than of CH_3OH in aqueous solution is
 CH_3S^{\ominus} CH_3O^- $C_6H_5O^-$, CH_3COO^- , OH^-
38. The number of resonating structures in which cyclopentadienyl carbanion exists is (including it)
39. The number of hyper conjugative resonating structures of



40. How many of the following are aromatic?

