CBRT - 2020
Question Paper Grid

Government of Goa 11 October 2020

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Subjects Assistant Professor(Chemistry(Organic))
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Assistant Professor(Chemistry(Organic))

Passage:
The factor of geographical distribution is equally, possibly even more, significant that English is spoken as first or native language in at least four continents of the world, Russian in two, Chinese and the Indian language in one. English is without question the closest approach to a world language today. It goes without saying that no two persons ever have an identical command of their common language. Certainly, they have not precisely the same vocabulary. There are at least minor differences in pronunciation, indeed the same individual will not pronounce his vowels and consonants in absolutely identical fashion everytime he utters them. Everyone possesses, in addition, certain individual traits of grammatical form and syntactical order, constituting that peculiar and personal quality of language which we term as style. 'Style is the man.' No men are identical, no two styles are the same. If this be true of but two persons, the potential of differences resident in a language spoken by more than 200 million truly staggers imagination.

Itemcode : **EM1071**
Q1 : The author argues that English is the closest approach to a world language because

(a) there are more native speakers of English than of any other language
(b) English has less number of mutually unintelligible dialects
(c) the geographical distribution of English covers a much greater area
(d) other languages are much too complex to be world languages
Key: **A**

Itemcode : **EM1072**
Q2 : The fact that the same individual will not pronounce his vowels and consonants identically everytime shows that

(a) literary style varies from person to person
(b) mutually intelligibility is a myth
(c) vocabulary varies from individual to individual
(d) no two persons speak the same language exactly the same way
Key: **D**

Itemcode : **EM1073**
Q3 : It is evident from the passage that style is

(a) a strange type of language
(b) a language where one does not have to be particular about correctness and grammar
(c) language used in a particular way by an individual
(d) a question of grammatical and syntactic correctness
Key: **C**

Itemcode : **EM1074**
Q4 : According to some authorities

(a) more people speak Chinese dialect than English
(b) more people speak English as an auxiliary language than as first language
(c) more people speak English in the UK than in England
(d) about one-fourth of the world's population speaks English
Key: **D**

Itemcode : **EM1075**
Q5 : The overall implication of the passage is that

(a) to suppose that 230 million people speak English as a native language would certainly be an underestimate
(b) the 55 million inhabitants of the British Isles speak like the 30 million inhabitants of the dominions and colonies
(c) a little less than half the native English speakers in the world live in the US
(d) About one-tenth of the total English speaking world population lives in British dominions and colonies
Key: **A**

Itemcode : **EM1061**
Q6 : A man starts his morning walk facing East. He turns 25 degree in the anticlockwise direction and then 105 degree in the clockwise direction and again 270 degree in the anticlockwise direction. Find which direction he is facing now?

(a) South west
(b) North West
(c) North
(d) East south
Key: **A**

Itemcode : **EM1062**

Q7 : Statements: All the Engineers are Bachelors. All the Bachelors are Intelligent.

Conclusions:1)All the intelligent people are Bachelors.
2)All the Engineers are intelligent
3)All the Bachelors are Engineers
.4)Some intelligent people are Engineers.

(a) Only (1) and (4)
(b) Only (3) and (4)
(c) Only (2) and (4)
(d) Only (1) and (2)
Key: **C**

Itemcode : **EM1063**

Q8 : 80 fishermen can catch 2000 fishes in 10 days working 6 hours a day. In how many days 20 fishermen can catch 3000 fishes working 5 hours a day?

(a) 70
(b) 68
(c) 72
(d) 74
Key: **C**

Itemcode : **EM1064**

Q9 : A train 100m long travelling at 96km/hr. passes another train, which is travelling at 120km/hr. travelling in opposite direction, in 8 seconds. Then the length of the second train is

(a) 300m
(b) 280m
(c) 200m
(d) 380m
Key: **D**

Itemcode : **EM1065**

Q10 : _____least number must be added to 1056, so that the sum is completely divisible by 23 ?

(a) 2
(b) 3
(c) 18
(d) 21
Key: **A**

Itemcode : **EM1066**

Q11 : Which of the following is a prime number ?

(a) 33
(b) 81
(c) 93
(d) 97
Key: **D**

Itemcode : **EM1067**

Q12 : Odd man out: 7, 8, 18, 57, 228, 1165, 6996

(a) 8
(b) 18
(c) 57
(d) 228
Key: **D**

Itemcode : **EM1068**

Q13 : Odd man out:
445, 221, 109, 46, 25, 11, 4

(a) 221
(b) 109
(c) 46
(d) 25
Key: **C**

Itemcode : **EM1069**

Q14 : Each question has an underlined word followed by four answer choices. You will choose the word that is a necessary part of the underlined word.
harvest

(a) autumn
(b) stockpile
(c) tractor
(d) crop
Key: **D**

Itemcode : **EM1070**

Q15 : Each question has an underlined word followed by four answer choices. You will choose the word that is a necessary part of the underlined word.desert

(a) cactus
(b) arid
(c) oasis
(d) flat
Key: **B**

Itemcode : **EM1051**

Q16 : Which of the following measurements is not a unit of distance?

(a) Ammeter
(b) Cubit
(c) Parsec
(d) angstrom
Key: **A**

Itemcode : **EM1052**

Q17 : Pitch of a sound depends upon its:

(a) Wavelength
(b) Frequency
(c) Amplitude
(d) Overtones
Key: **B**

Itemcode : **EM1053**

Q18 : The 'Cannes Award' is given for excellence in which field?

(a) Journalism
(b) Films
(c) Economics
(d) Literature
Key: **B**

Itemcode : **EM1054**

Q19 : Who amongst the following is the first Indian Woman Won Pulitzer prize?

(a) Arundhati Roy
(b) Kiran Desaiwrong
(c) Jhumpa Lahiri
(d) Manjula padmanabhan
Key: **C**

Itemcode : **EM1055**

Q20 : When the World Population Day is observed?

(a) June 7
(b) July
(c) July 11
(d) July 28
Key: **C**

Itemcode : **EM1056**

Q21 : The name of the Laccadive, Minicoy and Amindivi islands was changed to Lakshadweep by an Act of Parliament in

(a) 1970
(b) 1971
(c) 1972
(d) 1973
Key: **D**

Itemcode : **EM1057**

Q22 : Abdul Kalam Azad became the _____ President of India.

(a) 9th
(b) 10th
(c) 11th
(d) 12th
Key: **C**

Itemcode : **EM1058**

Q23 : Supreme Court Judges retire upon attaining the age of

(a) 65 years
(b) 62 years
(c) 68 years
(d) 70 years
Key: **A**

Itemcode : **EM1059**

Q24 When was the Rashtriya Swayamsevak Sangh built?
:

(a) 26 November 1935
(b) 15 August 1947
(c) 27 September 1925
(d) 26 January 1950
Key: **C**

Itemcode : **EM1060**

Q25 The first general elections under the Indian Constitution were held in _____.
:

(a) 1948
(b) 1957
(c) 1952
(d) 1950
Key: **C**

Itemcode : **EM1001**

Q26 On the basis of Mobious-Huckel Method predict which of the following cycloaddition reactions will be allowed under photochemical conditions.
:

(a) $[\pi 2_s + \pi 4_a]$

(b) $[\pi 2_a + \pi 4_a]$

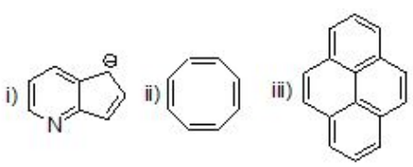
(c) $[\pi 2_s + \pi 2_a]$

(d) $[\pi 2_s + \pi 4_s]$

Key: **B**

Itemcode : **EM1002**

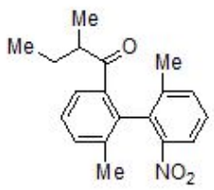
Q27
: The molecules (i), (ii), (iii) are _____, _____, _____, respectively.



(a) aromatic, antiaromatic, antiaromatic
(b) aromatic, non-aromatic, aromatic
(c) aromatic, non-aromatic, antiaromatic
(d) anitaromatic, antiaromatic, antiaromatic
Key: **B**

Itemcode : **EM1003**

Q28 The maximum number of stereoisomers possible for the compound given below is _____.
:

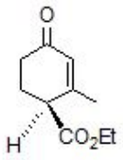


(a) 1
(b) 2
(c) 4
(d) 0
Key: **C**

Itemcode : **EM1004**

Q29
:

The IUPAC name of the compound given below is



(a) (*R*)-Ethyl 2-methyl-4-oxocyclohex-2-enecarboxylate

(b) (*S*)-Ethyl 2-methyl-4-oxocyclohex-2-enecarboxylate

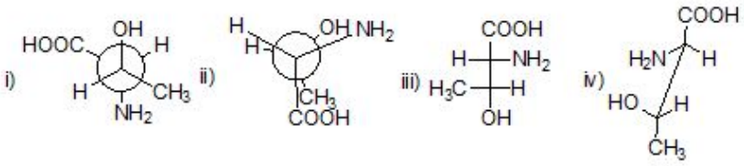
(c) (R)-4-Ethoxycarbonyl-3-methylcyclohex-2-enone

(d) (S)-4-Ethoxycarbonyl-3-methylcyclohex-2-enone

Key: **B**

Itemcode : **EM1005**

Q30 : Among the following compounds out a pair of [a] enantiomers and [b]diastereomers are _____ and _____, respectively.



(a) [a] (i) & (iii), and [b] (i) & (ii),

(b) [a] (i) & (iv), and [b] (i) & (iii),

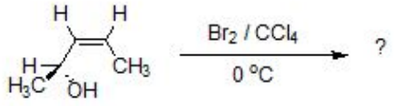
(c) [a] (i) & (ii), and [b] (ii) & (iv),

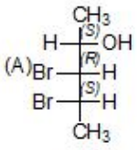
(d) [a] (i) & (iv), and [b] (ii) & (iii),

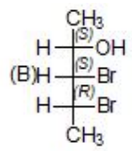
Key: **C**

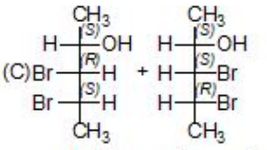
Itemcode : **EM1006**

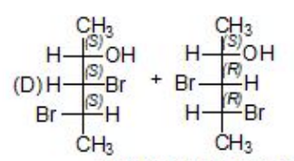
Q31 : The product(s) [in Fischer projection formula(e)] of the following bromine addition reaction with correct configuration is



(a)  only

(b)  only

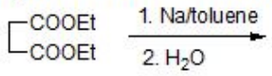
(c)  both in equal amount

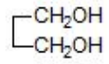
(d)  both in equal amount

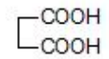
Key: **D**

Itemcode : **EM1007**

Q32 : The product of the following reaction is



(a) 

(b) 

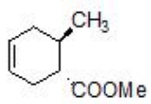
(c) 

(d) No reaction

Key: **C**

Itemcode : **EM1008**

Q33 : The diene and dienophile required to synthesise the compound given below are:



(a) 1,3-butadiene and *cis*-CH_3CH=CHCOOMe;

(b) 1,2-butadiene and *cis*-CH_3CH=CHCOOMe;

(c) 1,2-butadiene and *trans*-CH_3CH=CHCOOMe;

(d) 1,2-butadiene and *trans*-CH_3CH=CHCOOMe.

Key: **D**

Itemcode : **EM1009**

Q34 : An unknown compound Z has molecular formula $C_9H_{12}O$.
The IR spectrum of compound Z has its most important absorption bands at 1600, 1500, and 1100 cm^{-1}.
The ^1H NMR spectrum of Z is summarized as:
2.6 ppm, triplet, 2H;
3.3 ppm, singlet, 3H;
3.5 ppm, triplet, 2H;
7.1 ppm, singlet 5H.
Based on this data the structure for Z is

(a) $PhCH_2OCH_2CH_3$

(b) $PhCH_2CH_2OCH_3$

(c) $PhCH_2CH_2COCH_3$

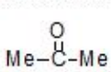
(d) $PhCH_2COCH_2CH_3$

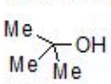
Key: **B**

Itemcode : **EM1010**

Q35 : The major product of the reaction between dimethyl carbonate (Me_2CO_3) and excess of MeMgI after acidic work-up will be

(a) MeCOOMe

(b) 

(c) 

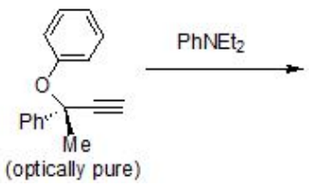
(d) 

Key: **C**

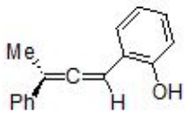
Itemcode : **EM1011**

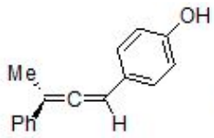
Q36 :

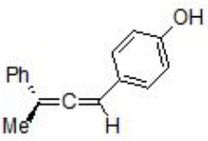
In the following sigmatropic rearrangement the structure of the allene formed and its configuration are

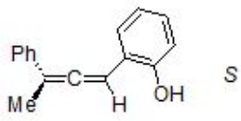


(optically pure)

(a)  *R*

(b)  *S*

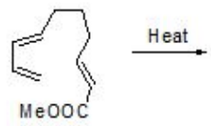
(c)  *R*

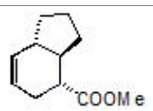
(d)  *S*

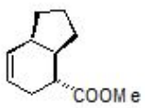
Key: **D**

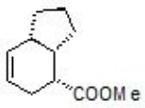
Itemcode : **EM1012**

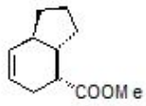
Q37 : What is the major product of the following reaction?



(a) 

(b) 

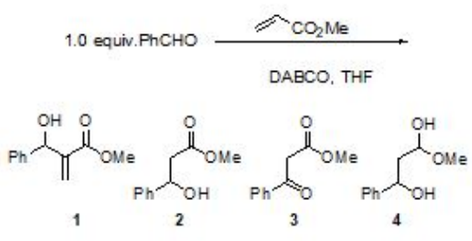
(c) 

(d) 

Key: **B**

Itemcode : **EM1013**

Q38 : In the following reaction, predict the major product: (sb)



(a) 1

(b) 3

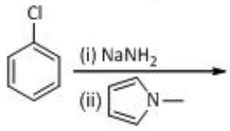
(c) 4

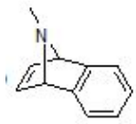
(d) 2

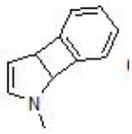
Key: **A**

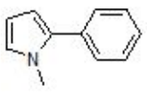
Itemcode : **EM1014**

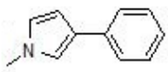
Q39 : The structure of the compounds formed in the following reaction.



(a) 

(b) 

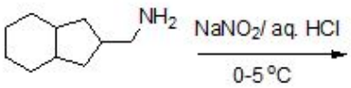
(c) 

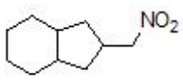
(d) 

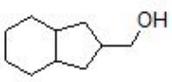
Key: **A**

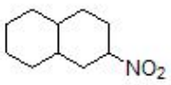
Itemcode : **EM1015**

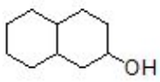
Q40 : The major product formed in the reaction given below is



(a) 

(b) 

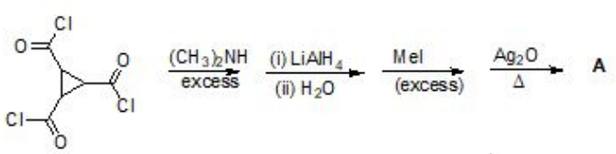
(c) 

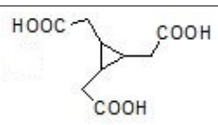
(d) 

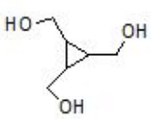
Key: **D**

Itemcode : **EM1016**

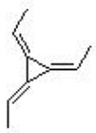
Q41 : Structure of compound **A** in following reaction is



(a) 

(b) 

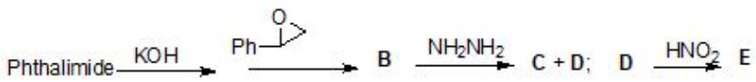
(c) 

(d) 

Key: **C**

Itemcode : **EM1017**

Q42 : Predict compound **D** and **E** in the following reaction



(a) 2-amino-1-phenylethanol and 2-phenylacetaldehyde respectively

(b) 1-amino-2-phenylethanol and 2-phenylacetaldehyde respectively

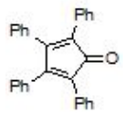
(c) 2-amino-1-phenylethanol and acetophenone respectively

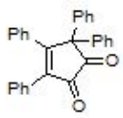
(d) 1-amino-2-phenylethanol and acetophenone respectively

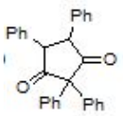
Key: **A**

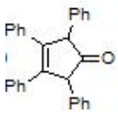
Itemcode : **EM1018**

Q43 : Consider you were asked to reflux a part of the benzil synthesized by you with dibenzyl ketone ($PhCH_2COCH_2Ph$) in alcoholic KOH. What product you would expect to obtain?

(a) 

(b) 

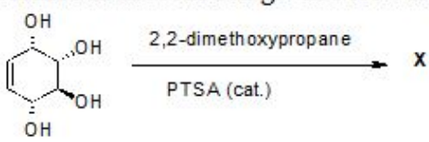
(c) 

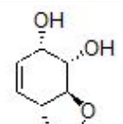
(d) 

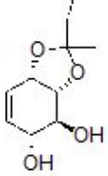
Key: **A**

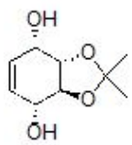
Itemcode : **EM1019**

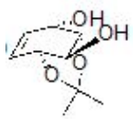
Q44 : The major product **X** formed in the reaction given below is



(a) 

(b) 

(c) 

(d) 

Key: **B**

Itemcode : **EM1020**

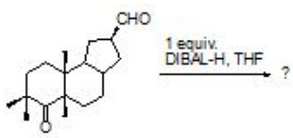
Q45 : The CBS (Corey-Bakshi-Shibata) reagent is used for

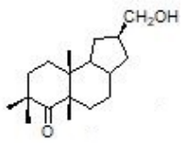
(a) asymmetric hydrogenation of alkene
(b) asymmetric reduction of ketone
(c) asymmetric epoxidation of alkene
(d) asymmetric formylation

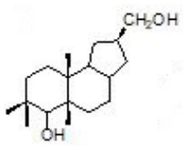
Key: **B**

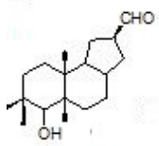
Itemcode : **EM1021**

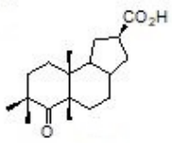
Q46 : Identify the correct product for the following transformation



(a) 

(b) 

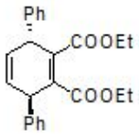
(c) 

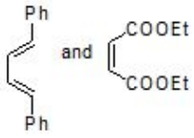
(d) 

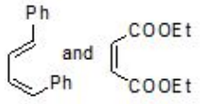
Key: **A**

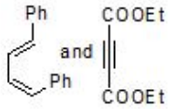
Itemcode : **EM1022**

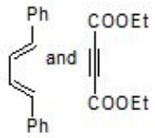
Q47 : The starting materials of the following DA product is



(a) 

(b) 

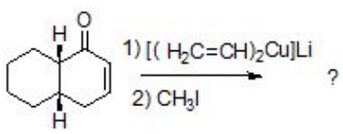
(c) 

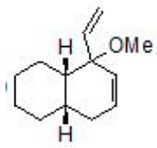
(d) 

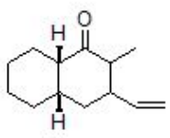
Key: **C**

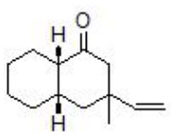
Itemcode : **EM1023**

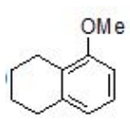
Q48 : Predict the major product of the following reactions.



(a) 

(b) 

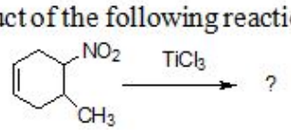
(c) 

(d) 

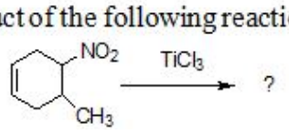
Key: **B**

Itemcode : **EM1024**

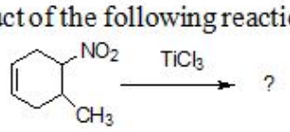
Q49 : The product of the following reaction is



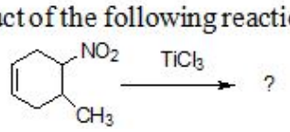
(a) The product of the following reaction is



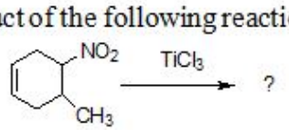
(b) The product of the following reaction is



(c) The product of the following reaction is



(d) The product of the following reaction is

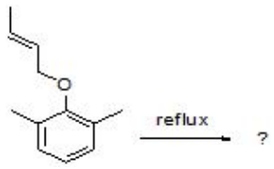


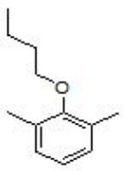
Key: **D**

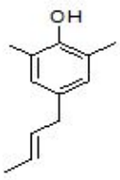
Itemcode : **EM1025**

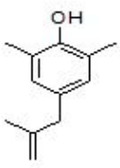
Q50 :

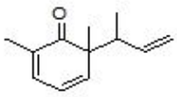
Find the final product of the following rearrangement reaction:



(a) 

(b) 

(c) 

(d) 

Key: **B**

Itemcode : **EM1026**

Q51 : . Which of the following π-electron energy levels is the lowest in energy in benzene molecule as per Hückel theory?

(a) $\alpha - \beta$

(b) $\alpha + \beta$

(c) $\alpha + 2\beta$

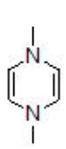
(d) $\alpha - 2\beta$

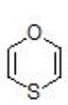
Key: **C**

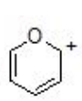
Itemcode : **EM1027**

Q52 : Among the following compounds, which are aromatic in nature considering the Hückel rule?

(i) 

(ii) 

(iii) 

(iv) 

(a) (i) and (iv).

(b) All four

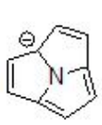
(c) (ii), (iii), (iv)

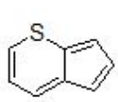
(d) Only (i)

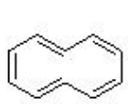
Key: **A**

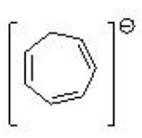
Itemcode : **EM1028**

Q53 : Predict the correct statement for the compounds as aromatic, antiaromatic, nonaromatic.

a) 

b) 

c) 

d) 

(a) (a) antiaromatic, (b) aromatic, (c) aromatic, (d) aromatic

(b) (a) aromatic, (b) aromatic, (c) aromatic, (d) antiaromatic

(c) (a) aromatic, (b) aromatic, (c) nonaromatic, (d) antiaromatic

(d) (a) aniaromatic, (b) aromatic, (c) aromatic, (d) antiaromatic

Key: **C**

Itemcode : **EM1029**

Q54 : An enantioselective reaction predominantly yields (+)-2-bromobutane with 10% contamination of (−)-2-bromobutane. If the specific rotation of (−)-2-bromobutane is −23.13°, the observed specific rotation of a sample of the product mixture would be

(a) −20.8°

(b) +18.5°

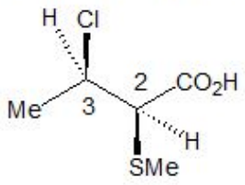
(c) +20.8°

(d) -4.6°

Key: **B**

Itemcode : **EM1030**

Q55 : The absolute configuration of the following molecule is



(a) 2R,3S

(b) 2R,3R

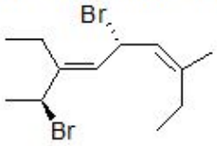
(c) 2S,3R

(d) 2S,3S

Key: **B**

Itemcode : **EM1031**

Q56 : The IUPAC name of the following molecule is



(a) (3Z,6E,2R,5S)-2,5-Dibromo-3-ethyl-7-methyl-nona-3,6-diene

(b) (3E,6Z,2S,5S)-2,5-Dibromo-3-ethyl-7-methyl-nona-3,6-diene

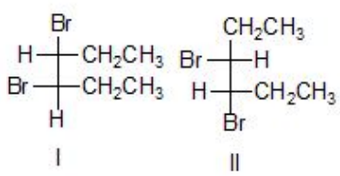
(c) (3Z,6E,2S,5R)-2,5-Dibromo-3-ethyl-7-methyl-nona-3,6-diene

(d) (3E,6Z,2S,5R)-2,5-Dibromo-3-ethyl-7-methyl-nona-3,6-diene

Key: **D**

Itemcode : **EM1032**

Q57 : The following compounds I & II are



(a) identical molecules,

(b) a pair of enantiomers,

(c) a pair of diastereomers,

(d) constitutional isomers.

Key: **C**

Itemcode : **EM1033**

Q58

: In a 300 MHz ^{1}H NMR spectrum, an organic molecule exhibited a doublet for a methyl group. The two lines of the doublet appeared at δ 2.154 and 2.187 ppm. The coupling constant (*J*) value is

(a) 7.6 Hz

(b) 8.4 MHz

(c) 9.9 Hz

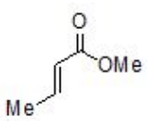
(d) 10.3 Hz

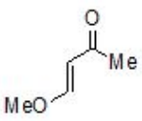
Key: **C**

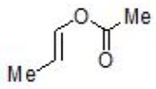
Itemcode : **EM1034**

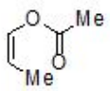
Q59 : An organic compound exhibited the following spectral data:

IR: 1760 cm-1
^{1}H NMR: δ (ppm): 7.2 (1H, d, *J* = 16.0 Hz), 5.1 (1 H, m), 2.1 (3 H, s), 1.8 (3H, d, *J* = 7.0 Hz)
^{13}C NMR: δ (ppm): 170 (carbonyl carbon).
Compound is

(a) 

(b) 

(c) 

(d) 

Key: **C**

Itemcode : **EM1035**

Q60 : The optically active compound $(C_6H_5)CH_2CH_2CH(OH)CH_2CH_3$ in its pure dextrorotatory (*d*) form has +26.8° specific rotation and observed specific rotation for a sample of certain concentration (in g/ml) is +11.6°. The % of *d* and % of levorotatory (*l*) forms in the sample are, respectively

(a) *d* =52 % and *l* = 48 %

(b) *d* =71.6 % and *l* = 28.4 %

(c) *d* = 28.4 % and *l* = 71.6 %

(d) *d* = 20 % and *l* = 80 %

Key: **B**

Itemcode : **EM1036**

Q61 : The base catalyzed hydrolysis of ethyl *m*-nitronenzoate is 63.5 times faster than the unsubstituted ester under the same conditions. What will be the rate of hydrolysis (k_{OMe}/k_H) of ethyl *p*-methoxybenzoate under the same conditions? [given $\sigma_{p\text{-MeO}} = -0.27$, $\sigma_{m\text{-NO2}} = 0.71$]

(a) 12 times faster

(b) 51 times slower

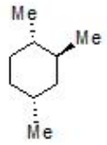
(c) 5 times slower

(d) can't be determined from the given data

Key: **C**

Itemcode : **EM1037**

Q62 : The potential energy difference in the two chair conformations of *trans*-2-*cis*-4-trimethyl cyclohexane (Y) in kcal/mol is [Given that each gauche butane interaction cost 0.9 Kcal/mol]



Y

(a) 0

(b) 0.9

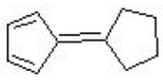
(c) 2.7

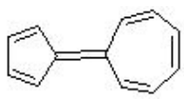
(d) 3.6.

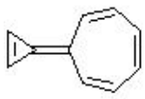
Key: **B**

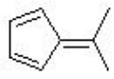
Itemcode : **EM1038**

Q63 : Among the following compounds, the one which has the highest dipole moment is

(a) 

(b) 

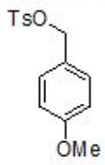
(c) 

(d) 

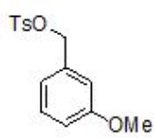
Key: **B**

Itemcode : **EM1039**

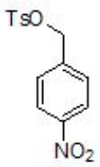
Q64 : Rank the following compounds from fastest to slowest in terms of their reactivity towards SN1 solvolysis with methanol.



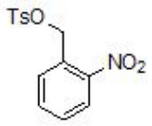
I



II



III



IV

(a) I>II>III>IV

(b) IV>III>II>I

(c) III>IV>II>I

(d) II>I>III>IV

Key: **A**

Itemcode : **EM1040**

Q65 : For the given reaction A + 2B → C, when 0.15 g of A is allowed to react with 0.15 g of B to give 0.20 g of C (Mol. Wt. of A, B and C are 148, 110 and 332 respectively), the % yield will be

(a) 60%

(b) 48%

(c) 95%

(d) 88%

Key: **A**

Itemcode : **EM1041**

Q66 : The aldol reactions between acetophenone and the following aldehydes follow different reaction rates. Choose the right option.
i) Benzaldhyde, ii) *p*-Nitrobenzaldehyde, iii) *p*-Methoxybenzaldehyde, iv) formaldehyde.

(a) ii>i>iii>iv

(b) iii>i>ii>iv

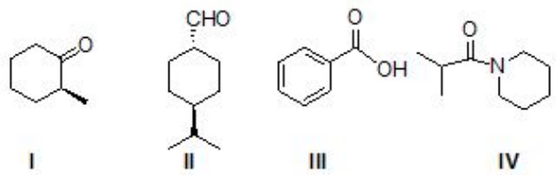
(c) iv>iii>i>ii

(d) iv>ii>i>iii

Key: **D**

Itemcode : **EM1042**

Q67 : Choose the right sequence of the increasing order of reactivity towards CH_3MgBr.



I II III IV

(a) I>II>III>IV

(b) III>II>I>IV

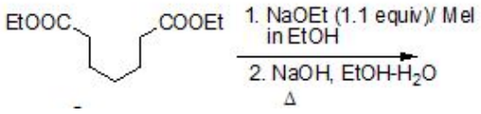
(c) II>I>III>IV

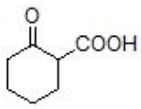
(d) II>I>IV>III.

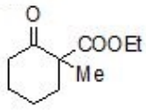
Key: **A**

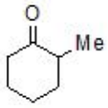
Itemcode : **EM1043**

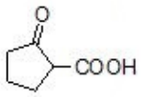
Q68 : The final product of the following transformation is



(a) 

(b) 

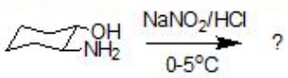
(c) 

(d) 

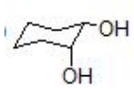
Key: **C**

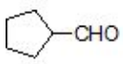
Itemcode : **EM1044**

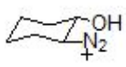
Q69 : The major product of the following reaction is



(a) 

(b) 

(c) 

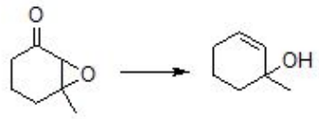
(d) 

Key: **C**

Itemcode : **EM1045**

Q70 :

The most suitable reagent(s) to effect the following transformation is



(a) N_2H_4, KOH, heat

(b) $TsNHNH_2$, CF_3COOH

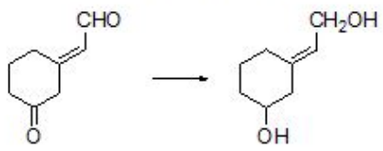
(c) $LiAlH_4$

(d) Na, Liq. NH_3

Key: **A**

Itemcode : **EM1046**

Q71 : For the following transformation choose the best reagent from the list:



(a) $LiAlH_4$

(b) MnO_2

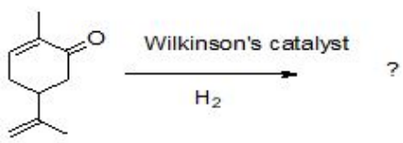
(c) DIBAL

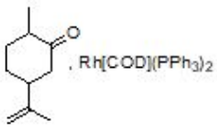
(d) $CeCl_3$-$NaBH_4$

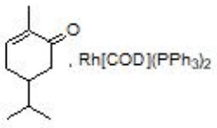
Key: **D**

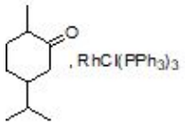
Itemcode : **EM1047**

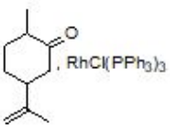
Q72 : Q22. The major product and the right choice of the structure of the given catalyst for the following reaction are



(a) 

(b) 

(c) 

(d) 

Key: **B**

Itemcode : **EM1048**

Q73 : Gas phase irradiation of 2-pentanone produces acetone and ethylene in about 90% yields *via* _____ mechanism.

(a) Norrish I

(b) Norrish II

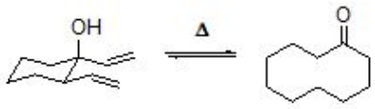
(c) photoreduction

(d) Photo-Fries rearrangement

Key: **B**

Itemcode : **EM1049**

Q74 : The following reaction is an example of



(a) Cope rearrangement

(b) Claisen rearrangement

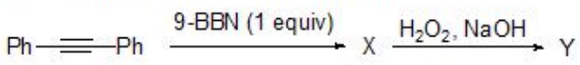
(c) 4π electrocyclic reaction

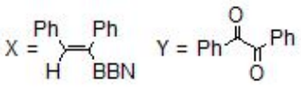
(d) [2,3]- sigmatropic rearrangement

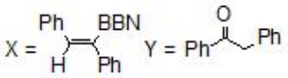
Key: **A**

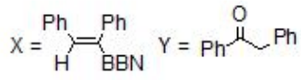
Itemcode : **EM1050**

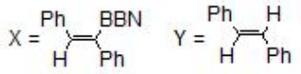
Q75 : Identify X and Y in the following scheme:



(a) 

(b) 

(c) 

(d) 

Key: **C**