

College of Science.
Department of Chemistry

كلية العلوم
قسم الكيمياء

Final Exam
Academic Year 1443-1444 Hijri- First Semester

Exam Information معلومات الامتحان		
Course name	Organic Chemistry (1)	
Course Code	CHEM 108	
Exam Date	2021-12-28	1443-05-24
Exam Time	08: 00 AM	
Exam Duration	3 hours	ثلاث ساعات
Classroom No.	5م 79 أ 1	
Instructor Name	أ.د. حمد اللحيدان	
	اسم المقرر	رمز المقرر
	تاريخ الامتحان	وقت الامتحان
	مدة الامتحان	رقم قاعة الاختبار
	اسم استاذ المقرر	

Student Information معلومات الطالب		
Student's Name		اسم الطالب
ID number		الرقم الجامعي
Section No.		رقم الشعبة
Serial Number		الرقم التسلسلي

General Instructions:

- Your Exam consists of 11 PAGES (except this paper)
- Keep your mobile and smart watch out of the classroom.

- عدد صفحات الامتحان 11 صفحة. (باستثناء هذه الورقة)
- يجب إبقاء الهواتف والساعات الذكية خارج قاعة الامتحان.

هذا الجزء خاص بأستاذ المادة

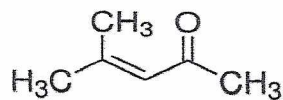
This section is ONLY for instructor

#	Course Learning Outcomes (CLOs)	Related Question (s)	Points	Final Score
1				
2				
3				
4				
5				
6				
7				
8				

يتم تصحيح الاجابات بناء على ما هو مكتوب في الجدول ادناه (حرف الإجابة الصحيحة) ولن ينظر إلى بقية الأوراق والتي
تعتبر مسودة. يمنع استخدام القلم الرصاص في جدول الإجابة. تكتب الاجابات بالأحرف الكبيرة - Write answers in capital letters

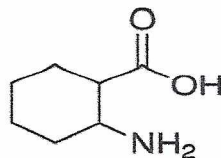
الإجابة	رقم السؤال	الإجابة	رقم السؤال
	24		1
	25		2
	26		3
	27		4
	28		5
	29		6
	30		7
	31		8
	32		9
	33		10
	34		11
	35		12
	36		13
	37		14
	38		15
	39		16
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	42		19
	43		20
	44		21
	45		22
	***		23

1. Which of the following is a correct name for



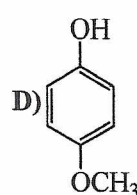
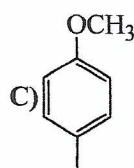
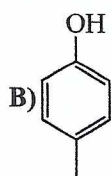
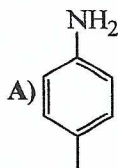
- A) 2-methyl-2-penten-4-one
- B) 4-methyl-3-penten-2-one
- C) 1,3-dimethyl-2-pental
- D) isopentenone

2. The IUPAC name of the compound



- A) o-Amino benzoic acid
- B) 2-Aminohexanoic acid
- C) 2-Aminocyclohexanecarboxylic acid
- D) o-Carboxyl aniline

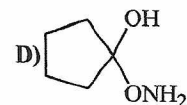
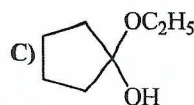
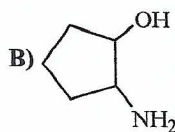
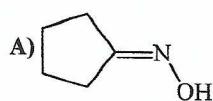
3. The structure of *p*-methyl anisole is:



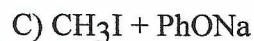
4. Carbohydrates are:

- A) Polyhydroxy aldehydes and phenols
- B) Polyhydroxy aldehydes and ketones
- C) Polyhydroxy ketones and phenols
- D) Polyhydroxy phenols and alcohols

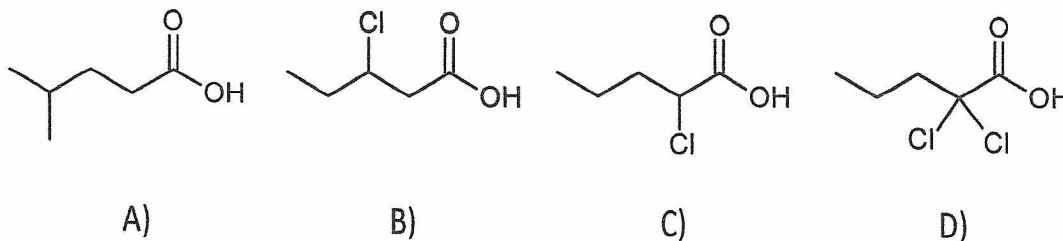
5. The product of the following reaction



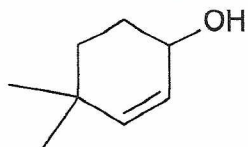
6. Which of the following methods is appropriate to prepare Methyl phenyl ether?



7. The acid with the highest acidity of the following is:



8. What is a correct name for the following compound?

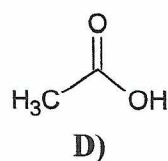
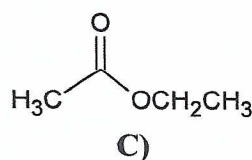
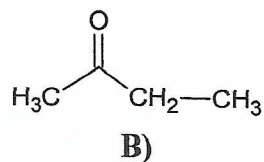
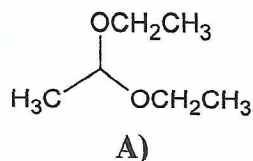
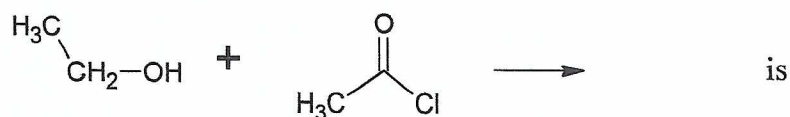


- A) 1,1-dimethyl-2-cyclohexenol
 B) 3,3-dimethyl-1-cyclohexen-6-ol
 C) 6,6-dimethyl-1-cyclohexen-3-ol
 D) 4,4-dimethyl-2-cyclohexenol

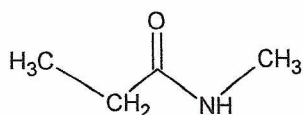
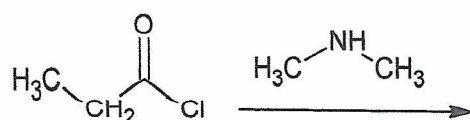
9. The following structure  represents an:

- A) 1° amine B) 2° amine C) 3° amine D) 3° amide

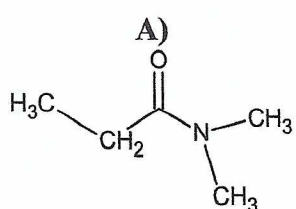
10. The product of the following reaction:



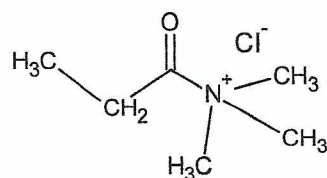
11. The product of the following reaction :



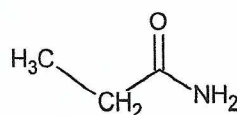
A)



C)

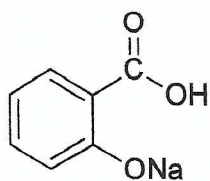
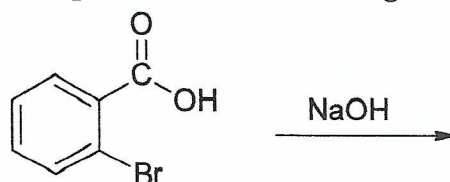


B)

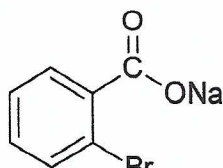


D)

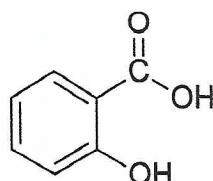
12. The product of the following reaction:



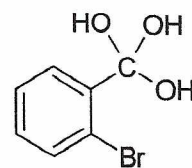
A)



B)



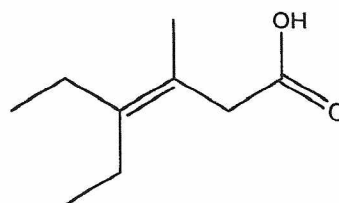
C)



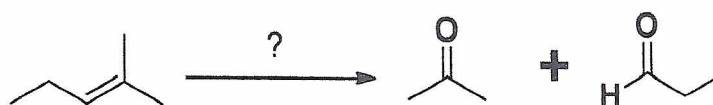
D)

13. The correct name of the compound

- A) 4,4-diethyl-3-methyl-3-butenic acid
- B) 4-ethyl-3-methyl-3-hexenoic acid
- C) 3-ethyl-4-methyl-3-hexenoic acid
- D) 3-ethyl-4-methyl-3-hexen-6-oic acid



14. What is the best reagent needed for the reaction below?



- A) O_2/Zn B) i) O_3 , ii) $\text{Zn}/\text{H}_2\text{O}$ C) PCC D) LiAlH_4

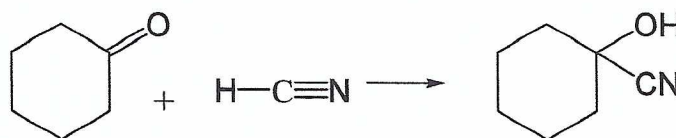
15. The compound with the highest boiling point is:

- A) Ethanol
B) Dimethyl ether
C) Propane
D) Acetaldehyde

16. The formation of ethylene glycol ($\text{HOCH}_2\text{CH}_2\text{OH}$) from ethylene ($\text{H}_2\text{C}=\text{CH}_2$) is an example of:

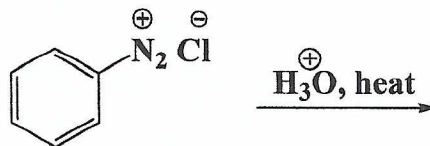
- A) Hydrogenation
B) Dehydration
C) Oxidation
D) Elimination

17. The following reaction is classified as:



- A) Nucleophilic substitution
B) Electrophilic substitution
C) Electrophilic addition
D) Nucleophilic addition

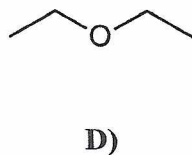
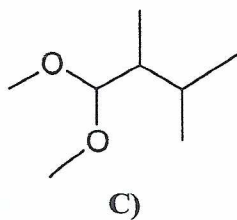
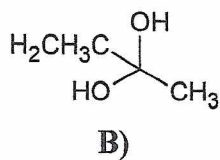
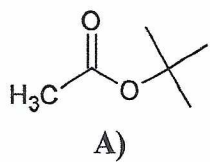
18. The product of the reaction



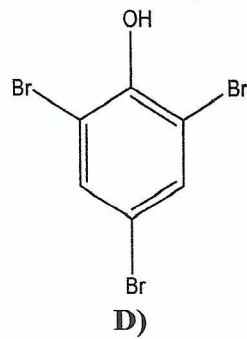
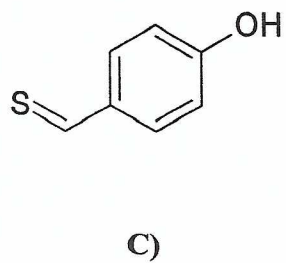
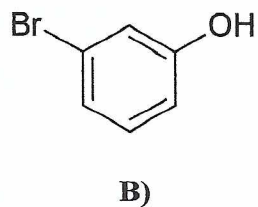
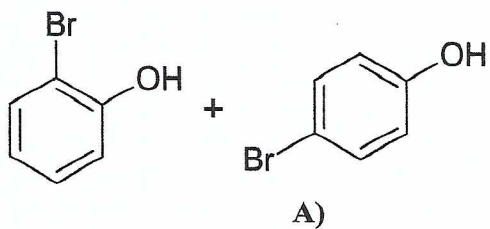
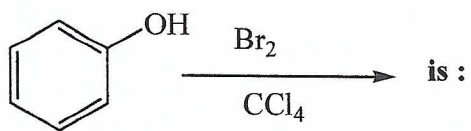
is:

- A) B) C) D)

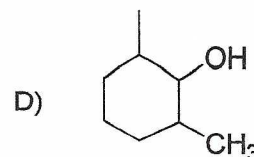
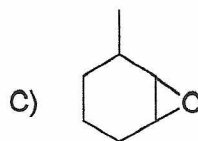
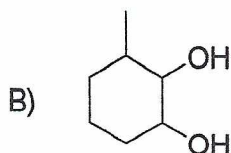
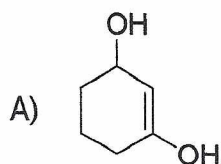
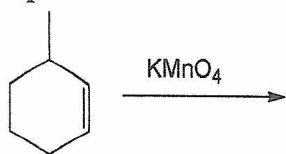
19- The structure of Acetal is:



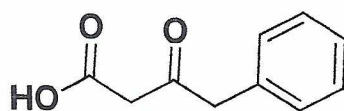
20. The product of the following reaction



21. What is the product of the following reaction?



22. The IUPAC name for the following compound:



A) 3-Benzyl-3-oxo-propanoic acid

B) 1-Phenyl-2-oxo-butanoic acid

C) β -Oxo- γ -Phenyl-butanoic acid

D) 3-Oxo-4-Phenylbutanoic acid

23. Two monosaccharides are joined by:

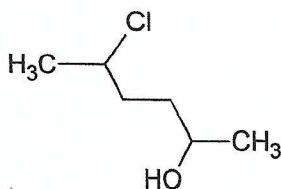
A) Peptide bond

B) Phosphodiester bond

C) Glycosidic bond

D) Hydrogen bond

24. The IUPAC name of the following structure is:



A) 2-Chloro-5-hydroxyhexane

B) 2-Hydroxy-5-chlorohexane

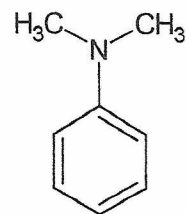
C) 5-Chloro-2-hexanol

D) 2-Chlorohexan-5-ol

25. The correct name of the compound

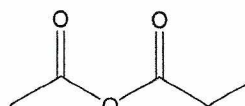
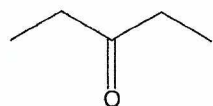

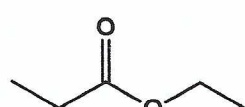
- A) N-Dimethyl benzene
C) N,N-Dimethyl aniline

- B) Dimethyl aniline
D) Toluidine

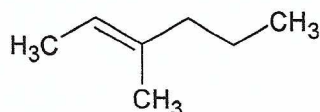


26. The main product of the following reaction is:



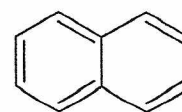
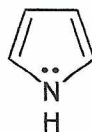
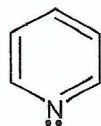
- A) 
- B) 
- C) 
- D) 

27. What is the best name for the following compound?



- A) 3-Methyl-2-hexene
B) 4-Methyl-4-hexene
C) 3-Methyl-3-hexene
D) 3-Methylhexene

28. Which of the following compounds is not aromatic in its behavior?



29. The deactivating substituent which is ortho-para directing in benzene reactions is:

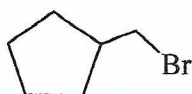
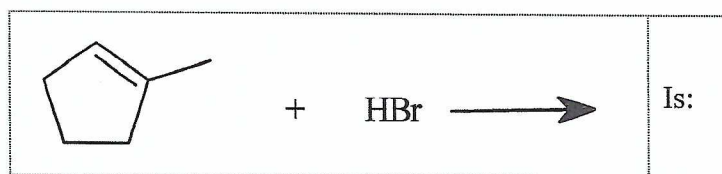
- A) $-\text{SO}_3\text{H}$ B) $-\text{OCH}_3$ C) $-\text{Cl}$ D) $-\text{NO}_2$

30. What is the best reagent to convert isobutyl alcohol to isobutyl chloride?

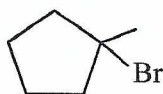


- A) NaOCl B) SOCl_2 C) Cl_2 D) $\text{CH}_3\text{-Cl}$

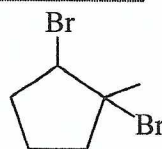
31. What is the major product of the following reaction?



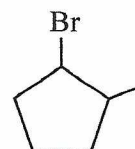
A)



B)



C)



D)

32. The compound with the highest solubility in water is:

- A) Diphenyl ether B) Acetic acid C) Cyclohexyl chloride D) Benzene

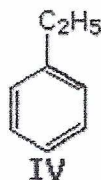
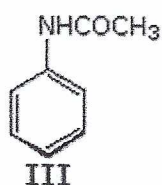
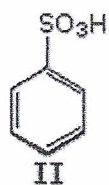
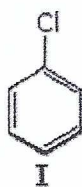
33. Hydrolysis of fats by alkalies into fatty acids and glycerol is called:

- A) Coagulation B) Saponification C) Suspension D) Denaturation

34. The main difference between saturated and unsaturated fatty acids is:

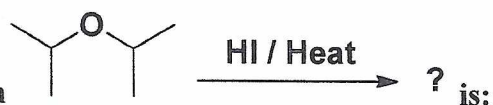
- A) the number of carbons.
B) the presence of double bonds.
C) the presence of keto groups
D) none of the above

35. What is the expected order of reactivity of the following compounds in electrophilic nitration? (more reactive > less reactive)



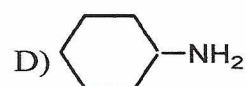
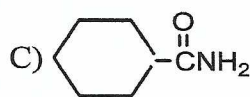
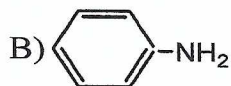
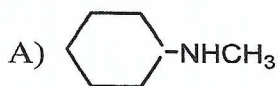
- A) I > II > III > IV
 B) IV > III > II > I
 C) III > IV > I > II
 D) II > I > IV > III

36. The product of the following reaction

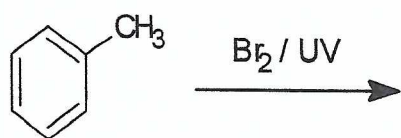


- A) Propyl iodide + propyl alcohol
 B) Isopropyl iodide + propanol
 C) Isopropyl iodide + isopropyl alcohol
 D) Propyl iodide + propanol

37. Which of the following would be the weakest base ?



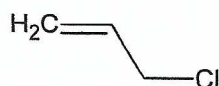
38. The following reaction



gives:

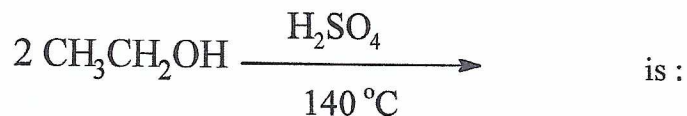
- A) *o*-Bromotoluene
 B) *p*-Bromotoluene
 C) Benzyl bromide
 D) *m*-Bromotoluene

39. The common name of the following structure is:



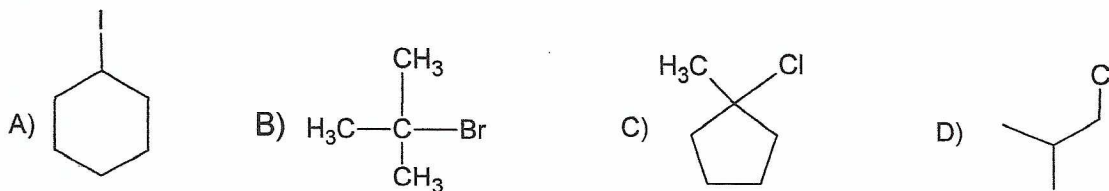
- A) Allyl chloride
 B) Vinyl chloride
 C) Benzyl chloride
 D) Propyl chloride

40. The major product of the following reaction:

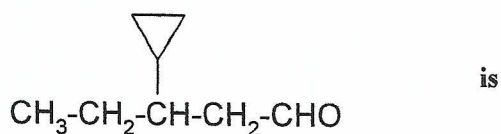


- A) $\text{CH}_3\text{-CH}_2\text{-O-CH}_2\text{CH}_3$ B) $\text{CH}_2=\text{CH}_2$ C) $\text{CH}_3\text{-CH}_2\text{-CO-CH}_3$ D) $\text{CH}_3\text{-CH}_2\text{OSO}_3\text{H}$

41. Which of the following structure is classified as secondary alkyl halides?

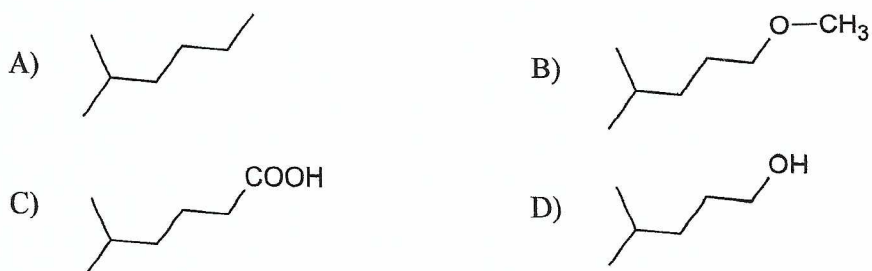
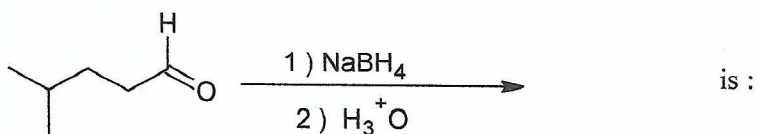


42. The IUPAC name of the following structure:



- A) 3-Cyclopropylpentanal B) 3-Cyclopropylpentanol
C) 3-Cyclopropylpentanone D) 3-Cyclopropylbutanal

43. The product of the following reaction:



44. The reaction of primary alkyl halide with aq. NaOH gives:

- A) Alkene B) Diol C) Alcohol D) Epoxide.

45. Which of the following statements about ketones is false?

A) can form cyanohydrin

B) can be oxidized to aldehyde

C) can form oxime

D) can be formed by oxidation of secondary alcohol