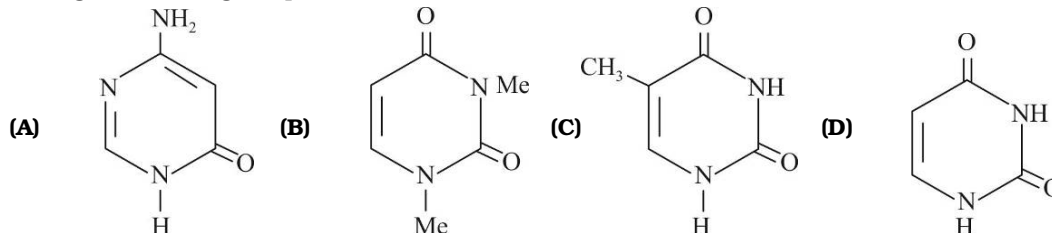


Date Planned : __ / __ / __	Daily Tutorial Sheet-4	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Main (Archive)	Exact Duration : _____

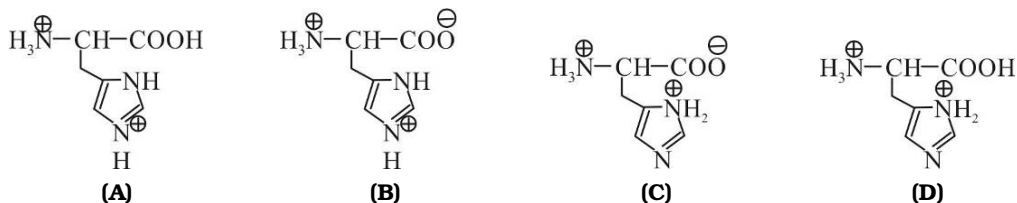
46. Among the following compounds, which one is found in RNA ? (2019)



47. Among the following compounds most basic amino acid is : (2019)

(A) Asparagine **(B)** Lysine **(C)** Histidine **(D)** Serine

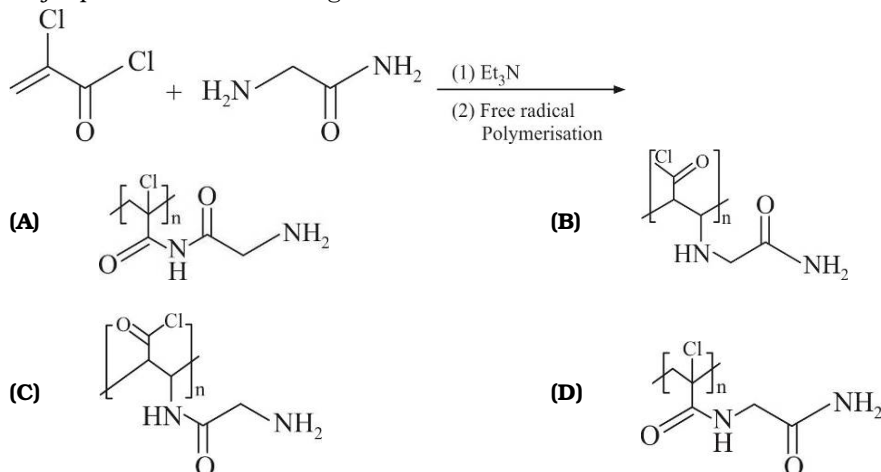
48. The correct structure of histidine in a strongly acidic solution (pH = 2) is : (2019)



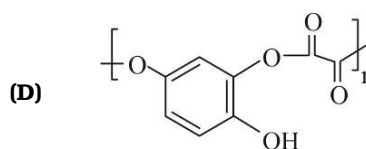
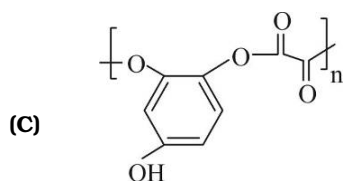
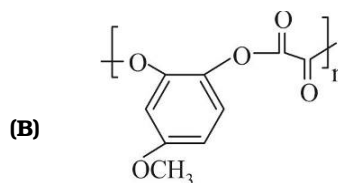
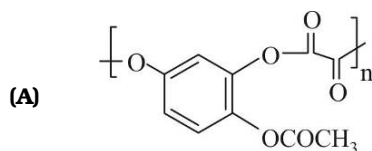
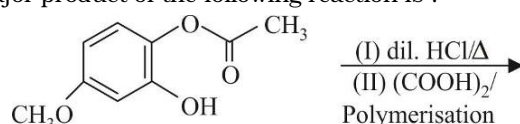
49. The correct match between Item I and Item II is : (2019)

Item-I	Item-II
(a) Ester test	(P) Tyr
(b) Carbylamine test	(Q) Asp
(c) Phthalein dye test	(R) Ser
	(S) Lys
(A) (a)-(Q); (b)-(S); (c) (P)	(B) (a)-(R); (b)-(S); (c) (Q)
(C) (a)-(R); (b)-(Q); (c) (P)	(D) (a)-(Q); (b)-(S); (c) (R)

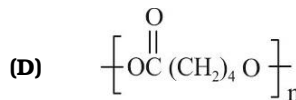
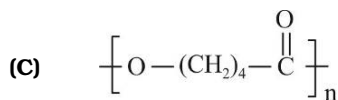
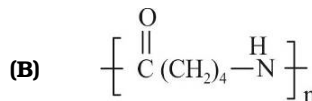
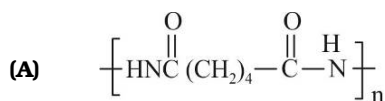
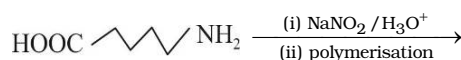
50. Major product of the following reaction is : (2019)



51. The major product of the following reaction is : (2019)



52. The polymer obtained from the following reactions is : (2019)



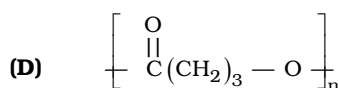
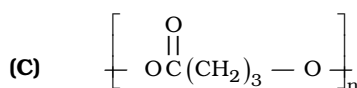
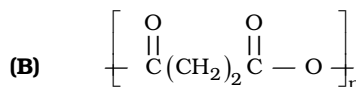
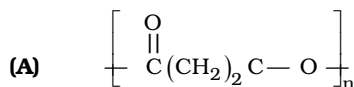
53. Poly- β -hydroxybutyrate-co- β -hydroxyvalerate (PHBV) is a copolymer of _____. (2019)

- (A) 3-hydroxybutanoic acid and 4-hydroxypentanoic acid
(B) 2-hydroxybutanoic acid and 3-hydroxypentanoic acid
(C) 3-hydroxybutanoic acid and 3-hydroxypentanoic acid
(D) 3-hydroxybutanoic acid and 2-hydroxypentanoic acid

54. The two monomers for the synthesis of Nylon 6, 6 are : (2019)

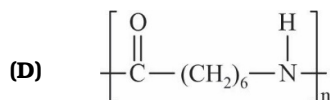
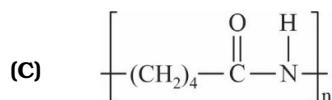
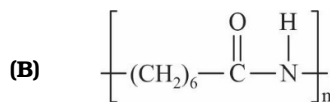
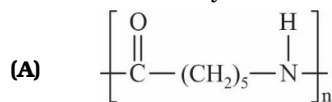
- (A) $\text{HOOC}(\text{CH}_2)_4\text{COOH}, \text{H}_2\text{N}(\text{CH}_2)_4\text{NH}_2$ (B) $\text{HOOC}(\text{CH}_2)_6\text{COOH}, \text{H}_2\text{N}(\text{CH}_2)_4\text{NH}_2$
(C) $\text{HOOC}(\text{CH}_2)_4\text{COOH}, \text{H}_2\text{N}(\text{CH}_2)_6\text{NH}_2$ (D) $\text{HOOC}(\text{CH}_2)_6\text{COOH}, \text{H}_2\text{N}(\text{CH}_2)_6\text{NH}_2$

55. The homopolymer formed from 4-hydroxybutanoic acid is : (2019)



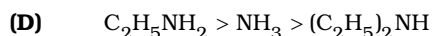
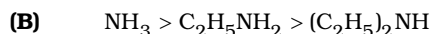
56. The structure of Nylon-6 is:

(2019)



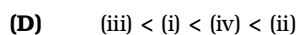
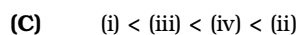
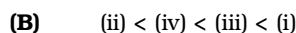
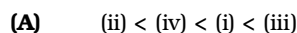
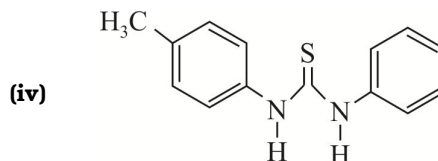
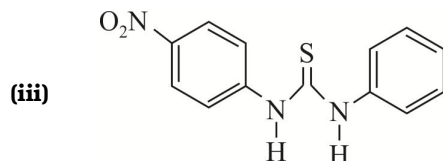
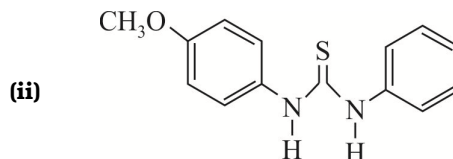
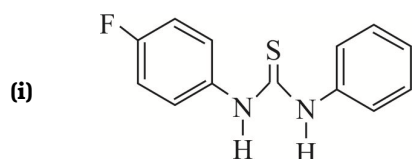
57. In the following compounds, the decreasing order of basic strength will be :

(2019)



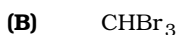
58. The increasing order of the pK_b of the following compound is:

(2019)



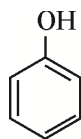
59. Which amongst the following is the strongest acid ?

(2019)

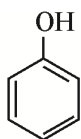


60. The increasing order of the pK_a values of the following compounds is :

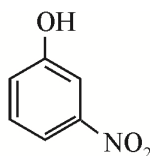
(2019)



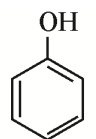
A



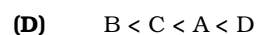
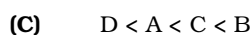
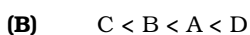
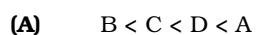
B



C



D



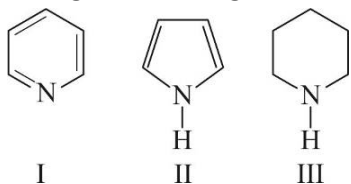
61. The correct decreasing order for acid strength is :

(2019)



62. Arrange the following amines in the decreasing order of basicity :

(2019)



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

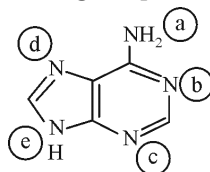
63. The increasing basicity order of the following compounds is :

(2019)

- (A) $\text{CH}_3\text{CH}_2\text{CH}_2$ (B) $\text{CH}_3\text{CH}_2\text{NHCH}_2\text{CH}_3$
(C) $\text{H}_3\text{C}-\text{N}(\text{CH}_3)_2$ (D) $\text{Ph}-\text{N}(\text{CH}_3)_2$
(A) (A) < (B) < (D) < (C) (B) (A) < (B) < (C) < (D)
(C) (D) < (C) < (A) < (B) (D) (D) < (C) < (B) < (A)

64. In the following compound,

(2019)

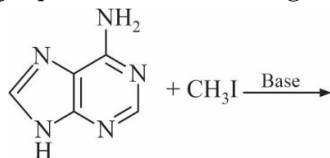


The favourable site/s for protonation is/are :

- (A) (b), (c) and (d) (B) (a) (C) (a) and (e) (D) (a) and (d)

65. The major product in the following reaction is:

(2019)



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

66. The number of sp^2 hybridized carbons present in "Aspartame" is _____.

(2020)

67. Which of the following statements is correct? (2020)
- (A) Gluconic acid is a partial oxidation product of glucose
 (B) Gluconic acid is obtained by oxidation of glucose with HNO_3
 (C) Gluconic acid can form cyclic (acetal/ hemiacetal) structure
 (D) Gluconic acid is a dicarboxylic acid
68. Two monomers in maltose are: (2020)
- (A) α -D-glucose and β -D-glucose (B) α -D-glucose and α -D-glucose
 (C) α -D-glucose and α -D-fructose (D) α -D-glucose and α -D-galactose
69. Preparation of Bakelite proceeds via reactions: (2020)
- (A) Electrophilic substitution and dehydration
 (B) Condensation and elimination
 (C) Electrophilic addition and dehydration
 (D) Nucleophilic addition and dehydration
70. Which polymer has 'chiral' monomer(s)? (2020)
- (A) Nylon 6, 6 (B) Neoprene (C) PHBV (D) Buna-N
71. A, B and C are three biomolecules. The results of the tests performed on them are given below : (2020)
- | | Molisch's Test | Barfoed Test | Biuret Test |
|----------|----------------|--------------|-------------|
| A | Positive | Negative | Negative |
| B | Positive | Positive | Negative |
| C | Negative | Negative | Positive |
- A, B and C are respectively:
- (A) A = Lactose, B = Glucose, C = Alanine
 (B) A = Lactose, B = Fructose, C = Alanine
 (C) A = Glucose, B = Fructose, C = Albumin
 (D) A = Lactose, B = Glucose, C = Albumin
72. A chemist has 4 samples of artificial sweetener A, B, C and D. To identify these samples, he performed certain experiments and noted the following observations: (2020)
- (i) A and D both form blue-violet colour with ninhydrin.
 (ii) Lassaigne extract of C gives positive AgNO_3 test and negative $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ test
 (iii) Lassaigne extract of B and D gives positive sodium nitroprusside test.
 Based on these observations which option is correct?
- (A) A : Saccharin; B : Alitame; C : Sucralose; D : Aspartame
 (B) A : Aspartame; B = Alitame; C : Saccharin; D : Sucralose
 (C) A : Aspartame; B : Saccharin; C : Sucralose; D : Alitame
 (D) A : Alitame; B = Saccharin; C : Aspartame; D : Sucralose
73. The number of chiral centres in penicillin is _____. (2020)

74. Which of the following statement is not true for glucose ? (2020)

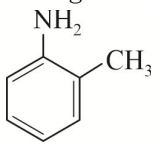
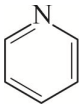
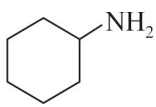
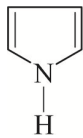
- (A) Glucose exists in two crystalline forms α and β
 (B) Glucose gives Schiff's test for aldehyde
 (C) The pentaacetate of glucose does not react with hydroxylamine to give oxime
 (D) Glucose reacts with hydroxylamine to form oxime

75. Match the following (2020)

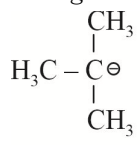
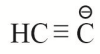
- | | |
|--------------------|-----------------|
| (i) Riboflavin | (a) Beriberi |
| (ii) Thiamine | (b) Scurvy |
| (iii) Pyridoxine | (c) Cheilosis |
| (iv) Ascorbic acid | (d) Convulsions |
- (A) (i) - (a), (ii) - (d), (iii) - (c), (iv) - (b) (B) (i) - (c), (ii) - (a), (iii) - (d), (iv) - (b)
 (C) (i) - (d), (ii) - (b), (iii) - (a), (iv) - (c) (D) (i) - (c), (ii) - (d), (iii) - (a), (iv) - (b)

76. The number of chiral carbons in chloramphenicol is _____. (2020)

77. The decreasing order of basicity of the following amines is: (2020)

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

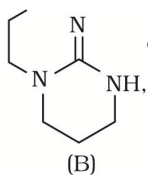
78. The increasing order of basicity for the following intermediates is (from weak to strong) (2020)

-     
- (i) (ii) (iii) (iv) (v)
- (A) (v) < (iii) < (ii) < (iv) < (i) (B) (iii) < (iv) < (ii) < (i) < (v)
 (C) (iii) < (i) < (ii) < (iv) < (v) (D) (v) < (i) < (iv) < (ii) < (iii)

79. A solution of m-chloroaniline, m-chlorophenol and m-chlorobenzoic acid in ethyl acetate was extracted initially with a saturated solution of NaHCO_3 to give fraction A. The left over organic phase was extracted with dilute NaOH solution to give fraction B. The final organic layer was labelled as fraction C. Fractions A, B and C, contain respectively: (2020)

- (A) m-chlorobenzoic acid, m-chlorophenol and m-chloroaniline
 (B) m-chlorophenol, m-chlorobenzoic acid and m-chloroaniline
 (C) m-chlorobenzoic acid, m-chloroaniline and m-chlorophenol, m-chloroaniline
 (D) m-chlorobenzoic acid and m-chlorophenol

80. The increasing order of pK_b for the following compounds will be: (2020)

- $\text{NH}_2 - \text{CH} = \text{NH}$, (A)  (C) CH_3NHCH_3
- (A) (C) < (A) < (B) (B) (A) < (B) < (C) (C) (B) < (C) < (A) (D) (B) < (A) < (C)