A.

Organic Chemistry

Choose the correct answer for each of the following:- **20 mark**

26. Which of the following is a correct name for $(C_2H_5)_2C=C(CH_3)CH_2CO_2H$?

A) 4,4-diethyl-3-methyl-3-butenoic 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

27. Which of the following is 2-ethyl-3-formyl-pentanoic acid?

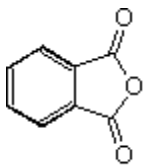
A) $C_2H_5CH(C_2H_5)CH(CO_2H)CHO$

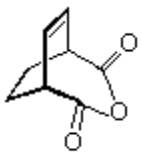
B) $(C_2H_5)_2CHCH(CHO)CO_2H$

C) $C_2H_5CH_2CH(CHO)CO_2C_2H_5$

D) $C_2H_5CH(CHO)CH(C_2H_5)CO_2H$

28. Which of the following compounds is not an anhydride?


A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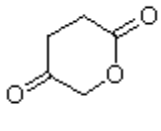
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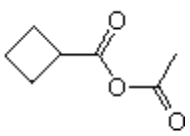

D

29. Which of the following compounds is not named correctly?

A) isopropyl propanoate $(CH_3)_2CHCO_2C_2H_5$

B) tert-butyl acetate $(CH_3)_3COCOCH_3$

C) methyl 2,2-dimethylpropanoate $(CH_3)_3CCO_2CH_3$

D) 2,2-dimethylbutanedioic acid $HO_2CC(CH_3)_2CH_2CO_2H$

30. The following general statements concerning vibrational frequencies and intensities, which one is incorrect?

A) stretching vibrations have a higher frequency than equivalent bending vibrations.
B) stretching vibrations of double bonds have a higher frequency than those of equivalent single bonds.
C) the stretching vibration of a Y-Y bond is more intense than that of a Y-Z bond. (Y and Z are different atoms)
D) stretching vibrations of a Y-H bond have a higher frequency than those of a Y-Z bond. (Y and Z are heavier atoms than H)

31. Which one of the following compounds will display spin-spin splitting in the 1Hnmr?

A) $(CH_3)_3COCH_3$
B) $Br(CH_2)_3Br$
C) *para*-xylene, $CH_3C_6H_4CH_3$
D) none of these

32

In propyne there are
(*a*) six σ bonds and two π bonds
(*b*) seven σ bonds and one π bond
(*c*) six σ bonds and one π bond
(*d*) eight σ bonds

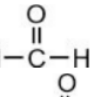
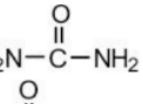
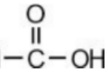
33

When the carbon atom is sp^2 hybridized in a compound, it is bonded to

(*a*) 2 other atoms
(*b*) 4 other atoms
(*c*) 3 other atoms
(*d*) 5 other atoms

34

Compound in which carbon uses sp^3 hybrid orbitals for bond formation is

(*a*) 
(*b*) 
(*c*) 
(*d*) $(CH_3)_3COH$

35

Which of the following is the correct order of bond lengths :

(*a*) C–C < C=C < C≡C
(*b*) C–C > C≡C > C=C
(*c*) C≡C > C–C > C=C

(*d*) C≡C < C–C > C=C

Biochemistry

Part I: Choose the correct Answer for each of the following:- 10 mark

36-Glucose-6-phosphatase is absent or deficient in:

A. Von Gierke's disease

B. Pompe's disease

C. Cori's disease

D. McArdle's disease

37-Glycogenin is:

A. Uncoupler of oxidative phosphorylation

B. Polymer of glycogen molecules

C. Protein primer for glycogen synthesis

D. Intermediate in glycogen breakdown

38-The conversion of alanine to glucose is termed:

A. Glycolysis

B. Oxidative decarboxylation

C. Specific dynamic action

D. Gluconeogenesis

39-Conversion of glucose to glucose-6-phosphate in human liver is by

A. Hexokinase only

B. Glucokinase only

C. Hexokinase and glucokinase

D. Glucose-6-phosphate dehydrogenase

40- A fatty acid which is not synthesized in the body and has to be supplied in the diet is

A. Palmitic acid

B. Lauric acid

C. Linolenic acid

D. Palmitoleic acid

Part II: Answer the following: **10 mark**

Q1: What are the amino acids involved in the synthesis of creatine and glutathione. **4 mark**

Q2: Explain the relationship between amino acids and some neurotransmitters. . **3 mark**

Q3: What is the role nucleic acids in the process of proteins biosynthesis . **3 mark**

Good luck