Computer Based Examination System

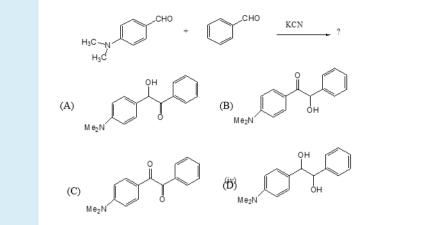
| Exported On * | 2022/11/21 15:37:11 |
|---------------|---|
| Title * | Question Paper Answer Key |
| OES Exam * | GPSC08202223 / Assistant Professors in Government College in Chemistry(Organic)/ Completed / 2022-11-19 |

| Question Description | For successful Claisen ester condensation is required. |
|----------------------|--|
| Α | more than one equivalent of base |
| В | more than one equivalent of acid |
| С | catalytic amount of base |
| D | catalytic amount of conc. H ₂ SO ₄ |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |

2

Question Description

The major product obtained in the following reaction is



| A | A |
|----------------|-------------------|
| В | В |
| с | C |
| D | D |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |

| 3 | Question Description | The rate of the reaction in ascending order for the following compounds with <i>i</i> -PrLi. I. C ₂ H ₅ CHO, II) PhCOCH ₃ , III) allyl bromide, IV) CH ₃ COOCH ₂ Ph is |
|---|----------------------|--|
| | A | I < III < II < IV |
| | В | II < III < I < IV |
| | С | III < IV < II < I |
| | D | IV < III < II < I |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |

| Question Description | An unknown compound Z has molecular formula C ₉ H ₁₂ O. The IR spectrum of compound Z has its important absorption bands at 1600, 1500, and 1100 cm ⁻¹ . The ¹ H NMR spectrum of Z is summarized as: 2.6 ppm, triplet, 2H; 3.3 ppm, singlet, 3H; 3.5 ppm, triplet, 2H; 7.1-7.3 ppm, multiplet 5H. Based on this data the structure for Z is |
|----------------------|--|
| A | PhCH ₂ OCH ₂ CH ₃ |
| В | PhCH ₂ CH ₂ OCH ₃ |
| С | PhCH ₂ CH ₂ COCH ₃ |
| D | PhCH ₂ COCH ₂ CH ₃ |
| E | None of the above |
| Correct Answer | В |
| Marks | 1 |

| Question Description | The structure of the product formed in the given reaction is |
|----------------------|---|
| | |
| | $NH_2 + CO_2H$ |
| | (A) _A (B) (C) (D) |
| | $ \begin{array}{c c} & & & \\ $ |
| | |
| | |
| | |
| | |
| A | A |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| | |
| Correct Answer | A |
| Marks | 1 |

| Question Description | What will be the major product of the below mentioned reaction? |
|----------------------|---|
| | $ \begin{array}{c} & & & \\ & $ |
| | $(A) (B) COOCH_3 (C) COOCH_3 (D) (COOCH_3 (D) (COOCH_3 (D) (COOCH_3 (C) (C) (C) (COOCH_3 (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)$ |
| Α | А |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |
| | |
| | |

| Question Description | Which compound is predicted to have the lowest pKa? |
|----------------------|--|
| | $\stackrel{(A)}{\underset{i \in H_3}{\overset{(B)}{\leftarrow}}} \stackrel{H}{\underset{i \in H_3}{\overset{(B)}{\leftarrow}}} \stackrel{H}{\underset{i \in H_3}{\overset{(C)}{\leftarrow}}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\underset{i \in H_3}{\overset{(D)}{\leftarrow}} \stackrel{H}{\underset{i \in H_3}{\overset{(D)}{\underset{i \in H_3}{\overset{(D)}{\underset{i \in H_3}{\overset{(D)}{\underset{i \in H_3}{\overset{(D)}{\underset{i \in H_3}{\overset{(D)}{\underset{i \in H_3}{\overset{(D)}{\underset{i \in H_3}{\overset{(D)}{i \in $ |
| Α | Α |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| Correct Answer | D |
| Marks | 1 |

| Question Description | Which statement is true for compounds I and II |
|----------------------|---|
| | $ \begin{array}{c} Br \\ H \\ $ |
| А | both are chiral with I: (R) and II: (S) configuration |
| В | both are chiral with I: (S) and II: (R) configuration |
| с | I is chiral with (<i>S</i>) configuration but II is achiral |
| D | I is chiral with (<i>R</i>) configuration but II is achiral |
| E | None of the above |
| Correct Answer | B |
| Marks | 1 |

| 9 | Question Description | Which one of the following statements is incorrect? A pseudo-asymmetric carbon |
|---|----------------------|---|
| | A | is stereogenic |
| | В | is chiral |
| | с | is a part of a meso compound |
| | D | always possesses a plane of symmetry |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |

| ¹⁰ Question Description | What will be the product(s) of the below mentioned reaction? $ \begin{array}{c} & \stackrel{Ph}{\underset{OH}{\leftrightarrow}} \\ & \stackrel{Ph}{\underset{H}{\leftarrow}} \\ & \stackrel{R= {}^{t}Bu}{\underset{R}{\leftarrow}} \\ & \stackrel{Ph}{\underset{H}{\leftarrow}} \\ & \stackrel{(B)}{\underset{H}{\leftarrow}} \\ & \stackrel{(C)}{\underset{H}{\leftarrow}} \\ & \stackrel{Ph}{\underset{H}{\leftarrow}} \\ & \stackrel{(D)}{\underset{CH=O}{\overset{both (B) and (C)}{\overset{both (B) and (C)}{both$ |
|------------------------------------|---|
| А | Α |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| Correct Answer | D |
| Marks | 1 |
| | |

| 11 | Question Description | Predict the major product of the below-mentioned reaction. |
|----|----------------------|---|
| | | $H_2C = 0 + HCI \frac{H_3PO_4}{HOAc}$ |
| | | (A) CH ₂ CI (B) CH ₂ OH (C) CH ₂ OAc (D) |
| | Α | Α |
| | В | В |
| | С | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | A |
| | Marks | 1 |
| | | |

| ² Questio | n Description | Carcerand is a like compound and calix-4-arene is a shaped compound |
|----------------------|---------------|---|
| Α | | Vase and Cage |
| В | | Tub and Vase |
| С | | Cage and Vase |
| D | | Vase and Tub |
| E | | None of the above |
| Correct | Answer | C |
| Marks | | 1 |

| Question Description | Describe the following as aromatic, anti-aromatic or non-aromatic (neither aromatic nor antiaromatic). Assume each is planar |
|----------------------|---|
| | $ \begin{array}{c} & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ $ |
| | (i) (ii) (iii) (iv) (v) (A) (i) anti-aromatic; (ii) aromatic; (iii) non-aromatic; (iv) anti-aromatic; (v) aromatic (B) (i) anti-aromatic; (ii) non-aromatic; (iv) anti-aromatic; (v) aromatic (C) (i) anti-aromatic; (ii) aromatic; (iv) anti-aromatic; (v) aromatic (D) (i) aromatic; (ii) non-aromatic; (iv) anti-aromatic; (v) aromatic |
| A | A |
| В | В |
| С | С |
| D | D |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |

| 4 | Question Description | The compounds that react with aqueous NaHCO ₃ to release CO ₂ are |
|---|----------------------|--|
| | | $(i) \qquad \qquad$ |
| | Α | i & iii |
| | В | ii & iv |
| | С | ii & iii |
| | D | i & iv |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |
| | | |

| 15 Question Description | The major product and the name of the following reaction are $\begin{aligned} & \leftarrow \downarrow $ |
|-------------------------|---|
| | A) , Cannizaro reaction B) , benzoin condensation HO Me C) , aldol reaction D) , Wolf-Kishner reduction |
| A | A |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| Correct Answer | В |
| Marks | 1 |
| | |

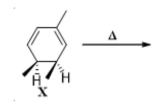
| 6 | Question Description | Which of the following substrate(s) is capable of undergoing E2 elimination with NaOMe in methanol at 55 °C? |
|---|----------------------|--|
| | | H = H = H = H = H = H = H = H = H = H = |
| | Α | I and III |
| | В | II only |
| | С | II and III |
| | D | I and IV |
| | E | None of the above |
| | Correct Answer | B |
| | Marks | 1 |
| | | |

| 17 | Question Description | Among the following, which one is least basic? (A) (B) (B) (C) (D) (D) (D) |
|----|----------------------|---|
| | A | A |
| | В | В |
| | С | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |

| 18 | Question Description | Condensation of a secondary amine, HCHO and a ketone is called |
|----|----------------------|--|
| | Α | Mannich reaction |
| | В | Wolff reaction |
| | c | Kolbe reaction |
| | D | Knoevenagel reaction |
| | E | None of the above |
| | Correct Answer | A |
| | Marks | 1 |

¹⁹ **Question Description**

The product formed when following compound \mathbf{X} undergoes electrocyclic ring opening under thermal condition is



4-Methyl-Z, Z, Z-2,4,6-octatriene

| В | 4-Methyl-Z, Z, E-2,4,6-octatriene |
|----------------|--|
| С | 5-Methyl- <i>E</i> , <i>Z</i> , <i>E</i> -2,4,6-octatriene |
| D | 4-Methyl-E, Z, E-2,4,6-octatriene |
| E | None of the above |
| Correct Answer | D |
| Marks | 1 |
| | |
| | |
| | |
| | |
| | |

| ²⁰ Question Description | Which of the following has lowest pKa value? |
|------------------------------------|--|
| | (a) COOH COOH COOH (b) OH (c) OH (d) OH |
| Α | a |
| В | b |
| с | c |
| D | d |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |
| | |

| 21 Question Description | What is the major product of the following reaction (with correct stereochemistry)? $ \begin{array}{c} & & & (+)-\text{diethyl tartrate} \\ \hline Ti(O-i-Pr)_4, t-BuOOH \\ \hline MS 4A \end{array} $ (A) $ \begin{array}{c} & & (B) \\ & & & (B) \\ & & & (B) \\ & & & (C) \\ & $ |
|-------------------------|--|
| A | A |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |

| 22 | Question Description | 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 \Box 2.154 and 2.187 ppm. The coupling constant (<i>J</i>) value is |
|----|----------------------|--|
| | A | 7.6 Hz |
| | В | 8.4 MHz |
| | C | 9.9 Hz |
| | D | 10.3 Hz |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |

| ³ Question Description | The absolute configuration of the following molecule is $\begin{array}{c} H \\ H \\ tBu \\ Br \\ SMe \end{array} Br \\ SMe \end{array}$ |
|-----------------------------------|---|
| Α | 2R, 3S |
| В | 2R, 3R |
| С | 2S, 3R |
| D | 2S, 3S |
| E | None of the above |
| Correct Answer | c |
| Marks | 1 |

| 24 | Question Description | Predict the major product of the following reaction. $ \begin{array}{c} & Ph \\ & Ph \\ $ |
|----|----------------------|--|
| | A | A Ph O Ph' |
| | | |
| | В | В |
| | с | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| | | |

| 25 | Question Description | Which one of the compounds is chiral? |
|----|----------------------|--|
| | | $HOOC \xrightarrow{CH_3} H \xrightarrow{H} H \xrightarrow{NH_2} H \xrightarrow{H} H \xrightarrow{NO_2} H \xrightarrow{H} H \xrightarrow{NO_2} H \xrightarrow{H} H \xrightarrow{H}$ |
| | A | A |
| | В | В |
| | С | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |
| | | |

| 26 | Question Description | The stereochemical relation between the two molecules is |
|----|----------------------|--|
| | | |
| | Α | enantiomer |
| | В | diastereomer |
| | C | identical |
| | D | constitutional isomer |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| | | |

| 27 | Question Description | Number of chiral centers present in the following molecule are $\begin{array}{c} & & \\ & & \\ & & \\ & & \\ & & \\ \end{array}$ |
|----|----------------------|--|
| | A | 4 |
| | В | 5 |
| | С | 6 |
| | D | 7 |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |
| | | |

| 28 | Question Description | Which one of the following is the pair of enantiomers |
|----|----------------------|---|
| | | (A) (B) $\downarrow \downarrow $ |
| | | (C) (D) $H_{H_{3}C(H_{2}C)_{3}}$ (D) $H_{H_{3}C(H_{2}C)_{3}}$ (D) $H_{CH_{3}}$ (D) $H_{CH_{3}}$ (D) $H_{H_{3}}$ (C) $H_{H_{3}}$ (C) H_{1} (C) |
| | Α | Α |
| | В | В |
| | С | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |
| | | |

| 29 Question Description | Which of the following will be the product from the reaction of (E)-2-hexene with m-chloroperbenzoic acid? (A) $H_3CH_2CH_2C_{H_2}C_{H_3}$ (B) $H_3CH_2CH_2C_{H_2}C_{H_3}$ (C) $H_3CH_2C_{H_2}C_{H_3}$ (D) a, b and c are all products of the reaction |
|-------------------------|--|
| Α | Α |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| Correct Answer | В |
| Marks | 1 |

| 30 Question Description | Which of the following reactants can be used to carry out the following reaction? \xrightarrow{CHO} a) HCHO/H ⁺ b) HCl + CO + AlCl ₃ c) anhydrous AlCl ₃ + DMF d) conc. H ₂ SO ₄ + Oleum |
|-------------------------|--|
| Α | a |
| В | b |
| с | c |
| D | d |
| Е | None of the above |
| Correct Answer | В |
| Marks | 1 |

| Α | d = 52 % and $l = 48 %$ |
|----------------|-----------------------------|
| | a 52 /0 and 1 10 /0 |
| В | d = 71.6 % and $l = 28.4 %$ |
| C | d = 28.4 % and $l = 71.6 %$ |
| D | d = 20 % and $l = 80 %$ |
| E | None of the above |
| Correct Answer | В |
| Marks | 1 |

| 2 | Question Description | The major product of the reaction between dimethyl carbonate (Me ₂ CO ₃) and excess of MeMgI after acidic work-up will be |
|---|----------------------|--|
| | | A) MeCOOMe B) Me-C-Me C) Me Me D) Me-Me |
| | Α | A |
| | В | В |
| | С | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |

| 33 | Question Description | The major product of the below-mentioned reaction is |
|----|----------------------|---|
| | | H ₃ CO PPA ? |
| | | $(A) \qquad H_{3}C_{1} \qquad H_{3}C_{1} \qquad H_{3}C_{2} \qquad H_{3}C_{2}$ |
| | A | A |
| | В | В |
| | C | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |
| | E Correct Answer | None of the above D |

| Question Description | Predict the major product of the following reaction. |
|----------------------|--|
| | $(i) \text{ aq. Hg(OAc)}_2 \qquad H_3O^+$ $(ii) \text{ NaBH}_4 \qquad \longrightarrow$ |
| | (A) (B) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C |
| | |
| | |
| A | A |
| В | В |
| с | С |
| D | D |
| E | None of the above |
| Correct Answer | В |
| Marks | 1 |

| 35 | Question Description | Match the following supramolecules with the best guest molecule which would make strongest binding with each other. |
|----|----------------------|---|
| | | a. 2.2.2-cryptandi. Potassium ion (K ⁺)b. γ-cyclodextrinii. Lithium ion (Li ⁺)c. 18-crown-6iii. 1-adamantanol |
| | Α | a = i; b = iii; c = ii |
| | В | a = ii; b = iii; c = i |
| | С | a = ii; b = i; c = iii |
| | D | a = i; b = ii; c = iii |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| | | |

| 36 | | 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% |
| | В | 48% |
| | С | 95% |
| | D | 88% |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |

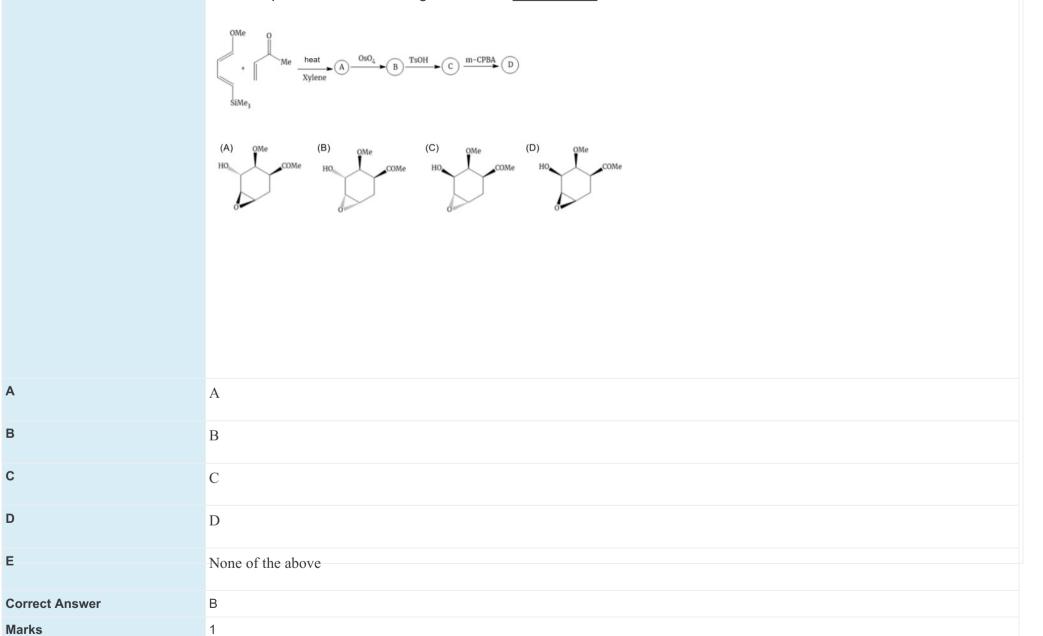
| ³⁷ Question Description | Identify the correct structure of β -anomer of cellobiose, 4- O -(β -D-glucopyranosyl)- β -D-glucopyranose. |
|------------------------------------|--|
| | $ \begin{array}{c} (A) & \stackrel{OH}{H_{0}} & (B) & \stackrel{OH}{H_{0}} & \stackrel{OH}{H_{0} & \stackrel{OH}{H_{0}} & \stackrel{OH}{H_{0}} & \stackrel{OH}{H_{0}} & \stackrel{OH}{H_{0}} & $ |
| A | A |
| В | В |
| С | C |
| D | D |
| E | None of the above |
| Correct Answer | C |
| Marks | 1 |
| | |

| 38 | Question Description | The following conversion can be achieved using: |
|----|----------------------|---|
| | | $(A) H_2SO_4 \qquad (B) TiCl_3 \qquad (C) SeO_2 \qquad (D) CrO_3$ |
| | Α | Α |
| | В | В |
| | С | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| | | |

| ⁹ Question Description | The products formed on reaction of the 2-(2-oxo-propyl)-cyclohexanone with acid and base respectively are: |
|-----------------------------------|---|
| | $(A) \qquad (B) \qquad (C) Only \qquad (D) Only \\ (C) Only (D) Only (D) Only \\ (C) Only (D) Only (D) Only \\ (C) Only (D) Only (D) Only (D) (D)$ |
| Α | A |
| В | В |
| с | C |
| D | D |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |

| | Question | Description |
|--|----------|-------------|
|--|----------|-------------|

The final product of the following reactions is _____



| 1 | Question Description | For the major product in electrophilic substitution reactions in the following compound |
|---|----------------------|---|
| | Α | Ring A will be active, with ortho-para substitution |
| | В | Ring A will be active, with meta substitution |
| | с | Ring B will be active, with ortho-para substitution |
| | D | Ring B will be active, with meta substitution |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |
| | | |

| 42 C | Question Description | Predict the intermediate X and product Y in the following reaction scheme: $Ph \xrightarrow{Ph} \xrightarrow{Ph} \xrightarrow{Ph} X \xrightarrow{H_2O_2, NaOH} Y$ $(A) X \xrightarrow{Ph} \xrightarrow{Ph} BBN Y = Ph \xrightarrow{O} Ph \qquad (B) X \xrightarrow{Ph} BBN Y = Ph \xrightarrow{O} Ph$ $(C) X \xrightarrow{Ph} \xrightarrow{Ph} BBN Y = Ph \xrightarrow{O} Ph \qquad (D) X \xrightarrow{Ph} BBN Y \xrightarrow{Ph} H$ |
|-------------|----------------------|---|
| A | 4 | A |
| B | 3 | В |
| C | ; | C |
| D |) | D |
| E | | None of the above |
| C | Correct Answer | C |
| N | larks | 1 |

| 43 | Question Description | □-CD has total secondary hydroxyl groups in it and 1-aza-18-crown-6 has oxygen atoms in it. |
|----|----------------------|--|
| | Α | Six, Six |
| | В | Seven, Six |
| | с | Six, Five |
| | D | Seven, Five |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |
| | | |
| 44 | Question Description | The correct order of decreasing nucleophilicity of the species HO ⁻ , CN ⁻ , I ⁻ , HS ⁻ in protic solvent towards S _N 2 reaction is |
| | Α | $HS^- > I^- > CN^- > HO^-$ |
| | В | $HO^- > I^- > CN^- > HS^-$ |
| | С | $\mathrm{HO}^- > \mathrm{CN}^- > \mathrm{HS}^- > \mathrm{I}^-$ |
| | D | $HS^- > CN^- > HO^- > I^-$ |
| | E | None of the above |
| | Correct Answer | A |
| | | |
| | Marks | 1 |

| ⁵ Question E | Description | Predict the correct option for the rate of the reaction in descending order for the following compounds towards HCN addition. i) CH ₃ CHO, ii) PhCHO, iii) CH ₃ COCH ₃ , iv) PhCOPh. |
|-------------------------|-------------|--|
| Α | | PhCHO>CH ₃ CHO>PhCOPh.>CH ₃ COCH ₃ |
| В | | CH ₃ CHO> PhCHO>CH ₃ COCH ₃ >PhCOPh. |
| С | | PhCOPh>CH ₃ COCH ₃ >CH ₃ CHO>PhCHO. |
| D | | CH ₃ CHO> CH ₃ COCH ₃ >PhCHO>PhCOPh. |
| E | | None of the above |
| Correct An | nswer | В |
| Marks | | 1 |
| | | |

| 6 | Question Description | Identify the name reaction which is occurring in the following transformation. |
|---|----------------------|--|
| | | $\xrightarrow{HO} N \xrightarrow{OH} 20\% H_2SO_4 \xrightarrow{N} Ph$ |
| | A | Claisen rearrangement |
| | В | Beckmann rearrangement |
| | С | Schimdt rearrangement |
| | D | Lossen rearrangement |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| | | |

| 47 | Question Description | Arrange the following cavitands in the ascending order as per their portal size (consider the wider portal for CD). (i) □-cyclodextrin; (ii) □-cyclodextrin; (iii) Cucurbit[5]uril; (iv) Cucurbit[8]uril. |
|----|----------------------|--|
| | Α | Cucurbit[5]uril□□-cyclodextrin < □-cyclodextrin < Cucurbit[8]uril |
| | В | Cucurbit[5]uril □ -cyclodextrin < Cucurbit[8]uril < □ -cyclodextrin |
| | С | □-cyclodextrin □ Cucurbit[5]uril < Cucurbit[8]uril < □-cyclodextrin |
| | D | □-cyclodextrin □ Cucurbit[5]uril < □-cyclodextrin < Cucurbit[8]uril |
| | E | None of the above |
| | Correct Answer | A |
| | Marks | 1 |

| 48 | Question Description | Select the structure that is consistent with the following ¹³ C NMR data: δ = 137, 129, 125, 18 |
|----|----------------------|---|
| | | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| | A | Α |
| | В | В |
| | C | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |
| | | |
| | | |
| | | |
| | | |

| 19 | Question Description | The major product formed in the following reaction is |
|----|----------------------|--|
| | | $(\downarrow \downarrow \downarrow) \xrightarrow{1. Me_2NCHO}_{POCI_3}$ $(\downarrow) \xrightarrow{1. Me_2NCHO}_{POCI_3}$ $($ |
| | A | Α |
| | В | В |
| | C | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |
| | | |

| 50 | Question Description | Among the following compounds, the one which has highest dipole moment is |
|----|----------------------|--|
| | | $(A) \bigcirc (B) \bigcirc (C) \bigcirc (C) \bigcirc (D) \bigcirc (C)$ |
| | A | Α |
| | В | В |
| | с | C |
| | D | D |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| 51 | Comprehension | With the disappearance of a language, it is not only a human creation that dies, but also a form of expressing a relationship with nature, an oral tradition, poetry and ultimately a culture, thereby contributing to global impoverishment of humanity. It is for these reasons that states, regions, society and civil as well as cultural organizations are seeking to adopt measures conducive to the preservation of languages. These languages constitute a priceless heritage, playing a central role in the preservation of the identity of numerous communities threatened on some continents, as well as being indispensable factors in ensuring cultural diversity. A number of warnings by linguists and other social scientists as well as international organizations have come to underline with growing intensity the crucial factor of languages and mother tongues in the development of human creativity, of the capacity to communicate, and above all, its primary role in evolving cultural identities. |
| | | |
| | Question Description | Identify from the options given below, the synonym of the phrase "global impoverishment" |

| В | poverty of the earth |
|----------------|----------------------|
| С | local enrichment |
| D | poverty in the world |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |

52 Comprehension

With the disappearance of a language, it is not only a human creation that dies, but also a form of expressing a relationship with nature, an oral tradition, poetry and ultimately a culture, thereby contributing to global impoverishment of humanity. It is for these reasons that states, regions, society and civil as well as cultural organizations are seeking to adopt measures conducive to the preservation of languages. These languages constitute a priceless heritage, playing a central role in the preservation of the identity of numerous communities threatened on some continents, as well as being indispensable factors in ensuring cultural diversity. A number of warnings by linguists and other social scientists as well as international organizations have come to underline with growing intensity the crucial factor of languages and mother tongues in the development of human creativity, of the capacity to communicate, and above all, its primary role in evolving cultural identities.

| Question Description | From the options provided below, select the one that is closest in meaning to the phrase "with growing intensity the crucial factor" as implied in the passage. |
|----------------------|---|
| A | with increasing vigour the pivotal part |
| В | with increasing anxiety the unique part |
| С | with intense worry the significant role |
| D | with excessive concern the important role |
| E | None of the above |
| Correct Answer | C |
| Marks | 1 |
| | |

53 Comprehension

With the disappearance of a language, it is not only a human creation that dies, but also a form of expressing a relationship with nature, an oral tradition, poetry and ultimately a culture, thereby contributing to global impoverishment of humanity. It is for these reasons that states, regions, society and civil as well as cultural organizations are seeking to adopt measures conducive to the preservation of languages. These languages constitute a priceless heritage, playing a central role in the preservation of the identity of numerous communities threatened on some continents, as well as being indispensable factors in ensuring cultural diversity. A number of warnings by linguists and other social scientists as well as international organizations have come to underline with growing intensity the crucial factor of languages and mother tongues in the development of human creativity, of the capacity to communicate, and above all, its primary role in evolving cultural identities.

| Question Description | Identify the word from the passage that is farthest in meaning to "central" as implied in the passage |
|----------------------|---|
| Α | peripheral |
| В | indispensable |
| С | pivotal |
| D | intense |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |

| 54 | Comprehension | With the disappearance of a language, it is not only a human creation that dies, but also a form of expressing a relationship with nature, an oral tradition, poetry and ultimately a culture, thereby contributing to global impoverishment of humanity. It is for these reasons that states, regions, society and civil as well as cultural organizations are seeking to adopt measures conducive to the preservation of languages. These languages constitute a priceless heritage, playing a central role in the preservation of the identity of numerous communities threatened on some continents, as well as being indispensable factors in ensuring cultural diversity. A number of warnings by linguists and other social scientists as well as international organizations have come to underline with growing intensity the crucial factor of languages and mother tongues in the development of human creativity, of the capacity to communicate, and above all, its primary role in evolving cultural identities. |
|----|----------------------|--|
| | Question Description | As per the passage, evolving cultural identity is the prime contribution to human society made by |
| | Α | oral tradition |
| | В | language and mother tongue |
| | С | process of communication |
| | D | development of human creativity |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |

| 55 | Comprehension | With the disappearance of a language, it is not only a human creation that dies, but also a form of expressing a relationship with nature, an oral tradition, poetry and ultimately a culture, thereby contributing to global impoverishment of humanity. It is for these reasons that states, regions, society and civil as well as cultural organizations are seeking to adopt measures conducive to the preservation of languages. These languages constitute a priceless heritage, playing a central role in the preservation of the identity of numerous communities threatened on some continents, as well as being indispensable factors in ensuring cultural diversity. A number of warnings by linguists and other social scientists as well as international organizations have come to underline with growing intensity the crucial factor of languages and mother tongues in the development of human creativity, of the capacity to communicate, and above all, its primary role in evolving cultural identities. |
|----|----------------------|--|
| | Question Description | The human society gets culturally impoverished when |
| | A | the relationship with nature is hindered |
| | В | human creation is undermined |
| | с | oral tradition is lost |
| | D | when a language disappears |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |

| 56 | Question Description | Which state/UT released the 'SAMRIDDHI', a one-time property tax amnesty scheme? |
|----|-----------------------|---|
| | Α | Gujarat |
| | В | Jammu and Kashmir |
| | с | Andhra Pradesh |
| | D | New Delhi |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |
| | | |
| | | |
| 57 | Question Description | Which country and the Indian Air Force are participating in "Garuda VI," a bilateral exercise? |
| 57 | Question Description | Which country and the Indian Air Force are participating in "Garuda VI," a bilateral exercise? Australia |
| 57 | | |
| 57 | Α | Australia |
| 57 | A B | Australia Sri Lanka |
| 57 | A B C | Australia Sri Lanka France |
| 57 | A B C D | Australia Sri Lanka France Japan |
| 57 | A B C D E | Australia Sri Lanka France Japan None of the above |

| 58 | Question Description | Where was India's Second National Model Vedic School inaugurated recently? |
|----|----------------------|--|
| | A | Dwarka |
| | В | Puri |
| | С | Badrinath |
| | D | Guwahati |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| | | |
| 59 | Question Description | Which education board has launched the mobile application "Dost for Life"? |
| | A | ICSE Board |
| | В | CBSE Board |
| | С | Open Board |
| | D | All of above |
| | E | None of the above |
| | Correct Answer | B |
| | Marks | 1 |
| | | |

| 60 | Question Description | How many satellites have been placed into orbit by ISRO's heaviest rocket LVM3 M2? |
|----|----------------------|---|
| | A | 31 |
| | В | 36 |
| | С | 35 |
| | D | 32 |
| | E | None of the above |
| | Correct Answer | B |
| | Marks | 1 |
| | | |
| 61 | Question Description | Durgavati Tiger Reserve, which was notified recently, is located in which state/UT? |
| | A | Andhra Pradesh |
| | В | West Bengal |
| | С | Maharashtra |
| | D | Madhya Pradesh |
| | E | None of the above |
| | Correct Answer | D |
| | | |
| | Marks | 1 |

| Question Description | Asia's Largest Compressed Biogas Plant has been inaugurated in which state? |
|----------------------|--|
| Α | Punjab |
| В | Haryana |
| C | Gujarat |
| D | Madhya Pradesh |
| E | None of the above |
| Correct Answer | A |
| Marks | 1 |
| | |
| Question Description | Who has launched a special WhatsApp helpline number for pregnant women? |
| Α | WCD |
| В | NCW |
| C | MHA |
| D | MoHFW |
| E | None of the above |
| Correct Answer | В |
| Marks | 1 |
| | A B C C C C C C C C C C C C C C C C C C |

| 64 | Question Description | What is the theme for the International Day of the Girl Child 2022? |
|----|----------------------|--|
| | Α | Courage and perseverance |
| | В | Good vs. Evil |
| | с | Redemption |
| | D | Our time is now-our rights, our future |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |
| | | |
| 65 | Question Description | Which IT company and the Indian government will collaborate on a programme to educate its digital toolkit? |
| | | |
| | A | Apple |
| | A B | Apple Dell |
| | | |
| | В | Dell |
| | B C | Dell Microsoft |
| | B C D | Dell Microsoft Wipro |
| | B C D E | Dell Microsoft Wipro None of the above |

| Question Description | Find the | e missin | g Num | bers |
|----------------------|----------|----------|-------|------|
| | 36 | 6 | 9 | 15 |
| | 88 | 11 | 9 | ? |
| | 120 | ? | 6 | 18 |
| Α | 54,41 | | | |
| В | 17,82 | | | |
| С | 17,10 | | | |
| D | 96,13 | | | |
| E | None of | the abo | ove | |
| Correct Answer | С | | | |
| Marks | 1 | | | |

| 67 | Question Description | Choose the pair that best represents a similar relationship to the one expressed in the original pair of words. |
|----|----------------------|---|
| | | PASTORAL : RURAL |
| | Α | metropolitan : urban |
| | В | harvest : autumn |
| | С | agrarian : benevolent |
| | D | sleepy : nocturnal |
| | E | None of the above |
| | Correct Answer | A |
| | Marks | 1 |
| | | |

| 88 | Question Description | How many such pairs of letters are there in the 'CONDITIONAL' each of which has as many letters between them in the word as in the English Alphabet? |
|----|----------------------|--|
| | A | One |
| | В | Two |
| | С | Three |
| | D | Four |
| | E | None of the above |
| | Correct Answer | E |
| | Marks | 1 |
| | | |

| 69 | Question Description | There is a certain relationship between two given pair on both side of '::' . One word is given on another side of '::' while another word is to be found from the given options, having the same relation with this word as the words of the given pair . Choose the correct word from the following options. Tectonics : Building : : Taxidermy : ? |
|----|----------------------|--|
| | Α | Classification |
| | В | Conserving |
| | С | Stuffing |
| | D | Collecting |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |
| | | |

| 0 | | A train 800 metres long is running at a speed of 78 km/hr. If it crosses a tunnel in 1 minute, then the length of the tunnel (in meters) is: |
|---|----------------|--|
| 4 | 4 | 130 |
| 1 | 3 | 360 |
| (| 0 | 500 |
| 1 | 0 | 540 |
| 1 | ≣ | None of the above |
| (| Correct Answer | C |
| ľ | Marks | 1 |

| 71 | Question Description | A wheel that has 6 cogs is meshed with a larger wheel of 14 cogs. When the smaller wheel has made 21 revolutions, then the number of revolutions mad by the larger wheel is: |
|----|----------------------|--|
| | A | 4 |
| | В | 9 |
| | С | 12 |
| | D | 49 |
| | E | None of the above |
| | Correct Answer | В |
| | Marks | 1 |
| | | |

| ² Question Description | There is a certain relationship between two given pair on both side of '::' . One word is given on another side of '::' while another word is to be found from the given options, having the same relation with this word as the words of the given pair . Choose the correct word from the following options. taxonomy : Classification : : Pedology : ? |
|-----------------------------------|--|
| Α | Nature |
| В | Farming |
| С | Soil |
| D | Mountain |
| E | None of the above |
| Correct Answer | C |
| Marks | 1 |

| 3 | | Four of the following five are related to each other in terms of English alphabet series and thus form a group. Which of the following does not fit to that group? |
|---|----------------|--|
| | Α | FUX |
| | В | PKN |
| | С | HSV |
| | D | MNP |
| | E | None of the above |
| | Correct Answer | D |
| | Marks | 1 |

| ⁴ Question Description | Each question given below consists of a statement, followed by three or four arguments numbered I, II, III and IV. You have to decide which of the arguments is/are 'strong' arguments) and which is/are 'weak' arguments) and accordingly choose your answer from the alternatives given below each question. |
|-----------------------------------|--|
| | Statement: Should trade unions be banned completely? |
| | Arguments: |
| | I. Yes. Workers can concentrate on production. |
| | II. No. This is the only way through which employees can put their demands before the management. |
| | III. Yes. Employees get their illegal demands fulfilled through these unions. |
| | IV. No. Trade unions are not banned in other economically advanced countries. |
| Α | Only I is strong |
| В | Only II is strong |
| С | Only I and II are strong |
| D | Only I, II and III are strong |
| E | None of the above |
| Correct Answer | В |
| Marks | 1 |
| | |

| 75 | | choose which pair of numbers comes next. 17 32 19 29 21 26 23 |
|----|----------------|--|
| | Α | 25 25 |
| | В | 20 22 |
| | С | 23 25 |
| | D | 25 22 |
| | E | None of the above |
| | Correct Answer | C |
| | Marks | 1 |