

Test Booklet Series



Test Booklet
(Chmistry)

Test Booklet No.

Name of Applicant

Answer Sheet No.

Applicant ID/Roll No. :

Signature of Applicant :

Date of Examination :

Signature of the Invigilator(s)

Time of Examination :

1.

2.

Duration : 2 Hour]

[Maximum Marks : 100

IMPORTANT INSTRUCTIONS

- (i) The question paper is in the form of Test-Booklet containing **100 (Hundred)** questions. All questions are compulsory. Each question carries four answers marked (A), (B), (C) and (D), out of which only one is correct. Choose the correct option or the most appropriate option.
- (ii) On receipt of the Test-Booklet (Question Paper), the candidate should immediately check it and ensure that it contains all the pages, i.e., **100** questions. Discrepancy, if any, should be reported by the candidate to the invigilator immediately after receiving the Test-Booklet.
- (iii) A separate Answer-Sheet is provided with the Test-Booklet/Question Paper. On this sheet there are **100** rows containing four circles each. One row pertains to one question.
- (iv) The candidate should write his/her Application ID/Roll number at the places provided on the cover page of the Test-Booklet/Question Paper and on the Answer-Sheet and **NOWHERE ELSE**.
- (v) No second Test-Booklet/Question Paper and Answer-Sheet will be given to a candidate. The candidates are advised to be careful in handling it and writing the answer on the Answer-Sheet.
- (vi) For every correct answer of the question **One (1) mark will be awarded**.
- (vii) Marking shall be done only on the basis of answers responded on the Answer-Sheet.
- (viii) To mark the answer on the Answer-Sheet, candidate should darken the appropriate circle in the row of each question with Blue or Black pen.
- (ix) For each question only **one** circle should be **darkened** as a mark of the answer adopted by the candidate. If more than one circle for the question are found darkened or with one black circle any other circle carries any mark, the answer will be treated as incorrect.
- (x) The candidates should not remove any paper from the Test-Booklet/Question Paper. Attempting to remove any paper shall be liable to be punished for use of unfair means.
- (xi) Rough work may be done on the blank space provided in the Test-Booklet/Question Paper only.
- (xii) *Mobile phones (even in Switch-off mode) and such other communication/programmable devices are not allowed inside the examination hall.*
- (xiii) No candidate shall be permitted to leave the examination hall before the expiry of the time.

DO NOT OPEN THIS QUESTION BOOKLET UNTIL ASKED TO DO SO.

PART-A
(Research Methodology)

1. The main objective of fundamental/basic research is:
(A) To solve an immediate practical problem
(B) To discover new facts and develop theories
(C) To evaluate existing social programs
(D) To study historical events

2. The scientific method of research is characterized by:
(A) Subjectivity and intuition
(B) Empiricism, objectivity, and replicability
(C) Relying solely on authority
(D) Lack of logical reasoning

3. While selecting a research topic, which of the following is the LEAST important consideration?
(A) Feasibility of the study
(B) Researcher's interest
(C) Availability of funds and time
(D) Personal biases of the researcher

4. The ethical principle of "Informed Consent" implies that:
(A) Participants must be forced to participate for the greater good
(B) Participants must be fully aware of the research procedures and agree voluntarily
(C) Researchers can hide the true purpose of the study to avoid bias
(D) Data can be shared publicly without participant knowledge

5. Fabrication, falsification, and plagiarism in research are collectively known as:
(A) Research misconduct
(B) Sampling error
(C) Ethical compliance
(D) Research methodology

6. Which research design is primarily concerned with describing the characteristics of a population or phenomenon?
(A) Exploratory research design
(B) Descriptive research design
(C) Experimental research design
(D) Diagnostic research design

7. In an experimental research design, the variable that is intentionally manipulated by the researcher is the:
(A) Dependent variable
(B) Extraneous variable
(C) Independent variable
(D) Control variable

8. Research conducted to find out the causes of an event that has already happened, without manipulating variables, is known as:
- (A) Action research (B) Ex-post facto research
(C) Applied research (D) Pure research
9. The "Control Group" in an experimental design is used to:
- (A) Introduce the experimental treatment
(B) Serve as a baseline for comparison with the experimental group
(C) Eliminate the dependent variable
(D) Increase the sample size
10. Deductive reasoning in the scientific method moves from:
- (A) Specific observations to general theories
(B) General theories to specific hypotheses
(C) Empirical data to conceptualization
(D) Null hypothesis to alternative hypothesis
11. Internal validity in an experimental design refers to:
- (A) The generalizability of the findings to the real world
(B) The certainty that the independent variable caused the changes in the dependent variable
(C) The consistency of the measuring instrument
(D) The representativeness of the sample
12. If every member of the population has an equal and independent chance of being selected, the sampling technique is called:
- (A) Purposive sampling (B) Convenience sampling
(C) Simple random sampling (D) Quota sampling
13. When the population is heterogeneous with distinct subgroups (strata), the most appropriate probability sampling technique is:
- (A) Simple random sampling (B) Stratified random sampling
(C) Cluster sampling (D) Snowball sampling

14. In cluster sampling, the sampling units selected are:
- (A) Individual elements
 - (B) Natural groupings or categories (e.g., districts, schools)
 - (C) Homogeneous subgroups
 - (D) Volunteers
15. Snowball sampling is specifically used when:
- (A) The population size is very large
 - (B) The sampling frame is readily available
 - (C) The population is hidden, rare, or difficult to access
 - (D) The researcher needs a perfectly representative sample
16. The difference between a sample statistic and the true population parameter is termed as:
- (A) Systematic error
 - (B) Sampling error
 - (C) Measurement error
 - (D) Non-sampling error
17. Which measurement scale classifies data into mutually exclusive categories without any order or ranking?
- (A) Ordinal scale
 - (B) Interval scale
 - (C) Nominal scale
 - (D) Ratio scale
18. A Likert scale (Strongly Disagree to Strongly Agree) is technically an example of:
- (A) Nominal scale
 - (B) Ordinal scale
 - (C) Interval scale
 - (D) Ratio scale
19. Which scaling technique asks respondents to rate an object on a series of bipolar adjectives (e.g., Good-Bad, Fast-Slow)?
- (A) Likert scale
 - (B) Guttman scale
 - (C) Semantic Differential scale
 - (D) Thurstone scale

- 20.** The key difference between a questionnaire and a schedule is:
- (A) A questionnaire is filled by the enumerator, a schedule is filled by the respondent
 - (B) A questionnaire is filled by the respondent, a schedule is filled by the enumerator/ interviewer
 - (C) A schedule is mailed, a questionnaire is given face-to-face
 - (D) There is no difference between them
- 21.** Data collected by the researcher themselves for the specific purpose of the current study is called:
- (A) Secondary data
 - (B) Primary data
 - (C) Official data
 - (D) Documentary data
- 22.** The process of checking the raw data to ensure completeness, accuracy, and consistency before analysis is called:
- (A) Coding
 - (B) Editing
 - (C) Tabulation
 - (D) Classification
- 23.** Assigning numerical values or symbols to the responses for computational purposes is known as:
- (A) Editing
 - (B) Coding
 - (C) Transcription
 - (D) Tabulation
- 24.** A histogram is used to graphically represent the distribution of:
- (A) Discrete/categorical data
 - (B) Continuous data grouped into class intervals
 - (C) Qualitative characteristics
 - (D) Proportions of a whole
- 25.** A pie chart is most effective for representing:
- (A) Trends over time
 - (B) The relationship between two continuous variables
 - (C) The percentage breakdown of a whole
 - (D) Frequency distribution of continuous data

26. A hypothesis that states there is no significant difference or relationship is called:
- (A) Directional hypothesis (B) Non-directional hypothesis
(C) Null hypothesis (D) Alternative hypothesis
27. "Students who study using method A will score significantly higher than those who study using method B." This is an example of:
- (A) Null hypothesis
(B) Directional alternative hypothesis
(C) Non-directional alternative hypothesis
(D) Ex-post facto hypothesis
28. A Type I error in hypothesis testing occurs when:
- (A) We fail to reject a true null hypothesis
(B) We reject a true null hypothesis
(C) We fail to reject a false null hypothesis
(D) We reject a false null hypothesis
29. The probability of committing a Type I error is denoted by:
- (A) Beta (β) (B) Alpha (α)
(C) P-value (D) Standard error
30. A statistical test that makes assumptions about the population parameters (like normal distribution, homogeneity of variance) is called:
- (A) Non-parametric test (B) Parametric test
(C) Chi-square test (D) Distribution-free test
31. The Chi-square (χ^2) test is primarily used to test:
- (A) The difference between means of two groups
(B) The association between two categorical variables
(C) The significance of regression coefficients
(D) The variance within a single group

32. In a Chi-square test of independence, if the calculated value of χ^2 is greater than the critical/ table value at the 0.05 level, we:
- (A) Accept the null hypothesis
 - (B) Reject the null hypothesis
 - (C) Conclude the variables are independent
 - (D) Conclude the sample is biased
33. The formula for calculating expected frequency (E) in a Chi-square contingency table cell is:
- (A) (Row Total $\times$ Column Total) / Grand Total
 - (B) (Row Total + Column Total) / Grand Total
 - (C) Grand Total / (Row Total $\times$ Column Total)
 - (D) Row Total / Column Total
34. Analysis of Variance (ANOVA) is used instead of multiple t-tests to compare the means of three or more groups because:
- (A) ANOVA is easier to calculate
 - (B) Multiple t-tests increase the risk of Type I error
 - (C) ANOVA does not require normal distribution
 - (D) ANOVA uses nominal data
35. In a one-way ANOVA, the "one way" refers to:
- (A) One dependent variable and one independent variable with multiple levels
 - (B) One independent variable and multiple dependent variables
 - (C) Only one sample being tested
 - (D) One-tailed test of significance
36. The F-ratio in One-way ANOVA is calculated as:
- (A) Within-group variance / Between-group variance
 - (B) Between-group variance / Within-group variance
 - (C) Total variance / Residual variance
 - (D) Mean square error / Mean square total
37. The degrees of freedom for "Between Groups" in a One-Way ANOVA with 'k' groups is:
- (A) $N - 1$
 - (B) $N - k$
 - (C) $k - 1$
 - (D) $(N - 1) - (k - 1)$

38. Which of the following is a non-parametric alternative to One-way ANOVA?
- (A) Kruskal-Wallis test (B) Mann-Whitney U test
(C) Wilcoxon signed-rank test (D) Chi-square goodness of fit
39. A multivariate statistical technique used to reduce a large number of interrelated variables to a smaller set of unobservable factors is:
- (A) Cluster Analysis (B) Factor Analysis
(C) Discriminant Analysis (D) Conjoint Analysis
40. In Factor Analysis, the proportion of variance in a specific variable explained by the common factors is called:
- (A) Communality (B) Eigenvalue
(C) Factor loading (D) Uniqueness
41. Which concept in Factor Analysis represents the total variance explained by a specific factor across all variables?
- (A) Communality (B) Eigenvalue
(C) Factor score (D) Rotation
42. Multiple Regression is used to:
- (A) Classify objects into groups
(B) Predict the value of a dependent variable based on two or more independent variables
(C) Reduce the number of variables
(D) Determine the association between two categorical variables
43. In Multiple Regression, the coefficient of multiple determination (R^2) represents:
- (A) The correlation between two independent variables
(B) The proportion of variance in the dependent variable explained by all independent variables
(C) The regression coefficient of the strongest predictor
(D) The standard error of the estimate
44. Pearson's correlation coefficient (r) measures:
- (A) The causal relationship between two variables
(B) The linear association between two continuous variables
(C) The association between two categorical variables
(D) The variance of a single variable

45. If the Pearson correlation coefficient between X and Y is -0.85 , it indicates:
- (A) A weak positive relationship (B) A strong positive relationship
(C) A strong negative relationship (D) No relationship
46. Which multivariate technique is used to group objects or individuals so that objects in the same group are highly similar to each other but different from objects in other groups?
- (A) Discriminant Analysis (B) Factor Analysis
(C) Cluster Analysis (D) Conjoint Analysis
47. The main difference between Cluster Analysis and Discriminant Analysis is that:
- (A) Cluster analysis requires predefined groups, discriminant analysis does not
(B) Discriminant analysis requires predefined groups, cluster analysis does not
(C) Cluster analysis uses metric data, discriminant analysis uses non-metric
(D) Discriminant analysis is for data reduction, cluster analysis is for prediction
48. Conjoint Analysis is primarily used in marketing research to:
- (A) Determine the optimal number of clusters
(B) Measure how consumers value different features of a product by analyzing trade-offs
(C) Reduce the dimensions of product features
(D) Classify customers into predefined demographic groups
49. The standard format for writing a quantitative research report is generally known by the acronym:
- (A) IMRAD (Introduction, Method, Results, And Discussion)
(B) PEST (Political, Economic, Social, Technological)
(C) SWOT (Strengths, Weaknesses, Opportunities, Threats)
(D) APA (American Psychological Association)
50. Which section of the research report contains a brief summary of the entire study, including the problem, methodology, major findings, and conclusions?
- (A) Introduction (B) Abstract/Executive Summary
(C) Literature Review (D) Discussion

PART-B
(Chemistry)

51. For the reaction, $A + B \xrightleftharpoons[k_{-1}]{k_1} C \xrightarrow{k_2} P$

$$k_1 = 2.5 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}, k_{-1} = 1.0 \times 10^4 \text{ s}^{-1}, k_2 = 10 \text{ s}^{-1}.$$

Under steady state approximation, the rate constant for the overall reaction in $\text{L mol}^{-1} \text{ s}^{-1}$ is

- (A) 250 (B) 265
(C) 235 (D) 305
52. The electron of a hydrogen atom is in its n^{th} Bohr orbit having de Broglie wavelength of $13.4 \text{ \AA}$. The value of n is [Radius of n^{th} Bohr orbit = $0.53 n^2 \text{ \AA}$, $\pi = 3.14$]
(A) 2 (B) 3
(C) 4 (D) 5
53. A dilute solution prepared by dissolving a non-volatile solute in one liter water shows a depression in freezing point of 0.186 K . This solute neither dissociates nor associates in water. The boiling point of the solution in Kelvin is
(Given: For pure water, boiling point = 373.15 K ; cryoscopic constant = $1.86 \text{ K (mol kg}^{-1})^{-1}$; ebullioscopic constant = $0.51 \text{ K (mol kg}^{-1})^{-1}$.)
(A) 373.201 (B) 333.231
(C) 393.102 (D) 360.321
54. A buffer solution is prepared by mixing 0.3 M NH_3 and $0.1 \text{ M NH}_4\text{NO}_3$. If K_b of NH_3 is 1.6×10^{-5} at 25°C , then the pH of the buffer solution at 25°C is
(A) 7.7 (B) 11.7
(C) 6.3 (D) 9.7
55. The first rotational absorption of $^{12}\text{C}^{16}\text{O}$ molecule is observed at 3.84 cm^{-1} . If an isotopic substitution is made with ^{18}O in the molecule, the frequency (in cm^{-1}) of first rotational absorption is
(A) 3.66 (B) 3.98
(C) 3.26 (D) 2.96

56. The resonance frequency of ^1H nuclei is 300 MHz in an NMR spectrometer. If the spectrometer is operated at 12 T magnetic field, the resonance frequency (in MHz) of the same ^1H nuclei is

Given : Nuclear magneton (β_N) = $5.05 \times 10^{-27} \text{ JT}^{-1}$, Nuclear g -factor for ^1H = 5.586, Planck's constant (h) = $6.63 \times 10^{-34} \text{ Js}$.

- (A) 550 (B) 490
(C) 511 (D) 535

57. If 1 M of a dye in water transmits 50% of incident light at 400 nm, then 2 M of the dye in water transmits _____ % of the incident light at 400 nm, provided both the experiments are performed in the same spectrophotometric cell.

- (A) 25 (B) 35
(C) 15 (D) 30

58. A reaction of 10.50 g of 1,2-diphenylethane-1,2-dione with conc. NaOH followed by aqueous acidic work-up furnished 8.55 g of a carboxylic acid. What is the percentage yield of the carboxylic acid in this reaction?

- (A) 67 (B) 82
(C) 75 (D) 60

59. An electron with wave function $\psi = \sqrt{2} \sin(\pi x)$ in the range from $x = 0$ to $x = 1$. The probability of finding the electron in the middle half is

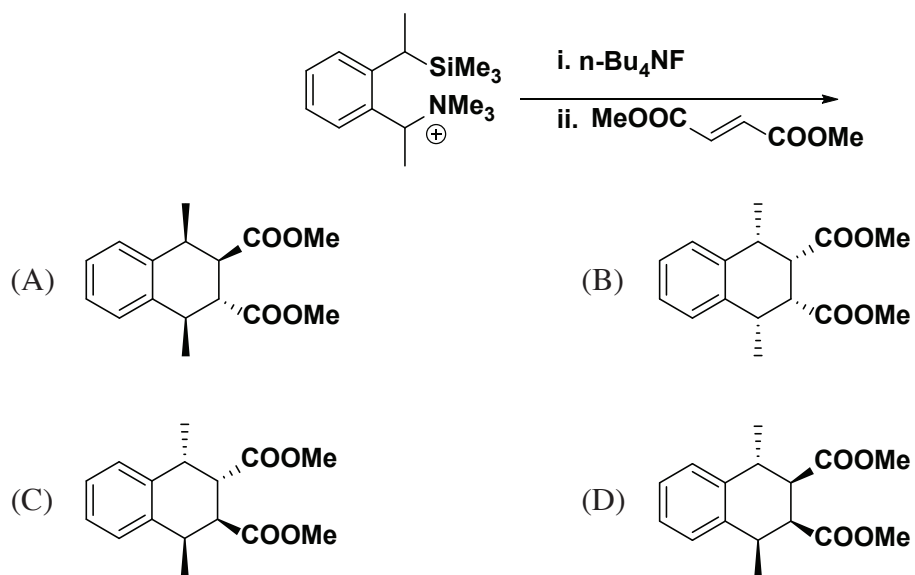
- (A) 76% (B) 52%
(C) 50% (D) 81.8%

60. Micelle formation is accompanied by the

- (A) decrease in overall entropy due to ordering.
(B) increase in overall entropy mostly due to increase in solvent entropy.
(C) increase in overall entropy mostly due to increase in solute entropy.
(D) increase in overall entropy and decrease in enthalpy.

61. The temperature dependence of the rate constant for a second-order chemical reaction obeys the Arrhenius equation. The SI unit of the 'pre-exponential factor' is
- (A) s^{-1} (B) $m^3 mol^{-1} s^{-1}$
(C) $mol m^{-3} s^{-1}$ (D) $(m^3 mol^{-1})^2 s^{-1}$
62. In differential thermal analysis (DTA)
- (A) The temperature differences between the sample and reference are measured as a function of temperature
(B) The differences in heat flow into the reference and sample are measured as a function of temperature
(C) The change in the mass of the sample is measured as a function of temperature
(D) The glass transition is observed as a sharp peak
63. Eigen value of an anti-Hermitian operator is
- (A) zero (B) real positive
(C) real negative (D) imaginary
64. 5 moles of an ideal monatomic gas undergo reversible adiabatic expansion from $4 dm^3$ to $16 dm^3$ at 300 K. The change in internal energy (in kJ) is nearly equal to
- (A) 0 (B) -11
(C) -22 (D) -44
65. In rotational Raman spectroscopy, the change in the rotational quantum number for the Stokes and anti-Stokes lines, respectively, are
- (A) $\Delta J = +1$ and $\Delta J = -1$ (B) $\Delta J = -1$ and $\Delta J = +1$
(C) $\Delta J = -2$ and $\Delta J = +2$ (D) $\Delta J = +2$ and $\Delta J = -2$
66. For a non-linear and non-cyclic molecule with N atoms, what is the number of bending modes of vibration?
- (A) $2N - 5$ (B) $3N - 5$
(C) $2N - 4$ (D) $3N - 6$

67. The major product formed in the following reaction is



68. Specific rotation of the **(R)-enantiomer** of a chiral compound is **48**. The specific rotation of a sample of this compound which contains **25% of (S)-enantiomer** is

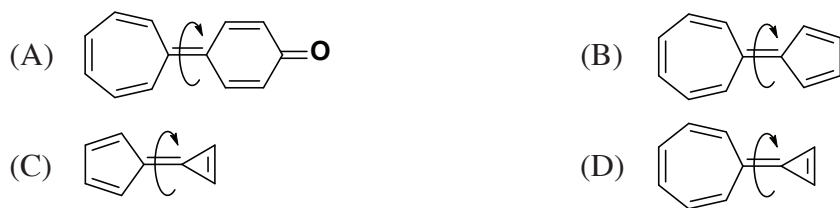
- (A) 20° (B) 24°
(C) 28° (D) 48°

69. What does the following symbol refer in a laboratory?

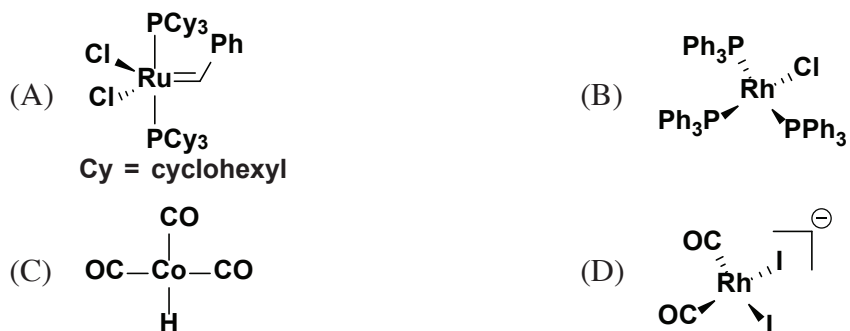
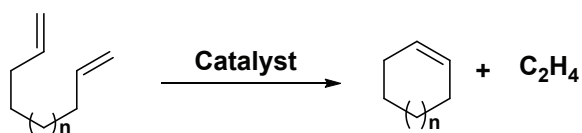


- (A) Flammable (B) Oxidizing
(C) Corrosive (D) Poisonous

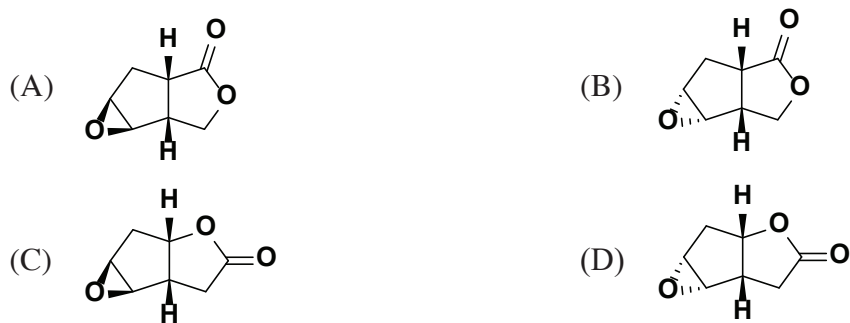
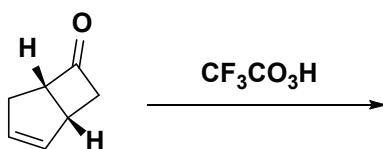
70. The compound having a highest barrier for rotation about the marked bond is



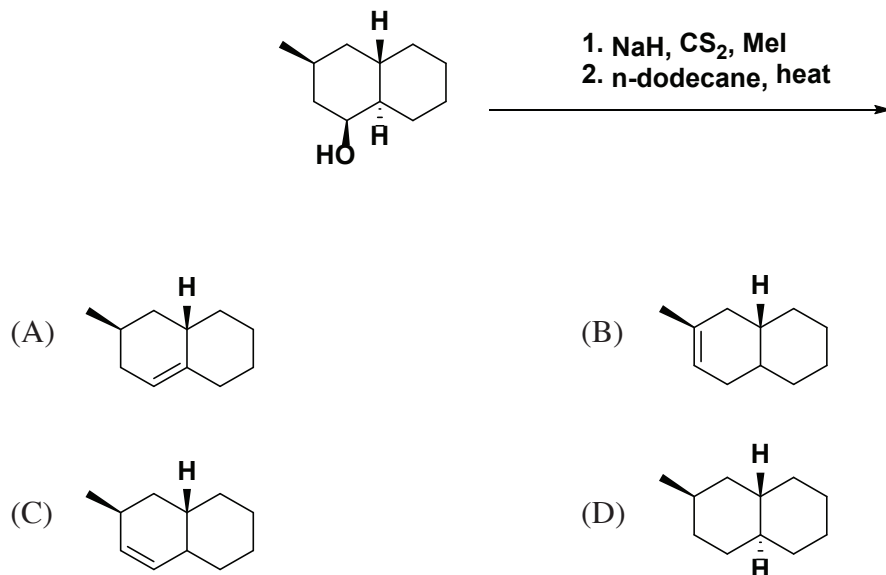
71. The organometallic catalyst for the following transformation is



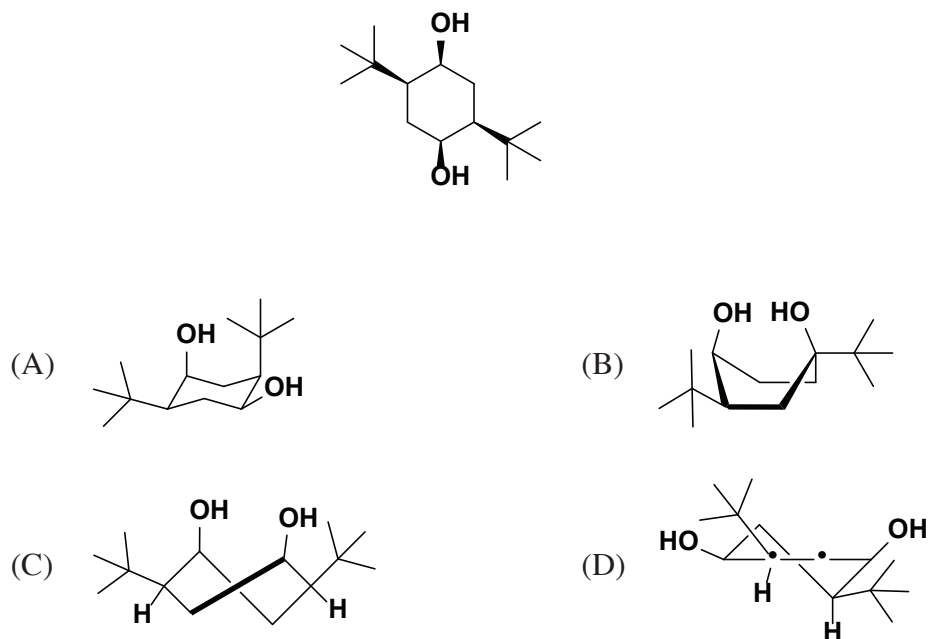
72. The major product formed in the following reaction is



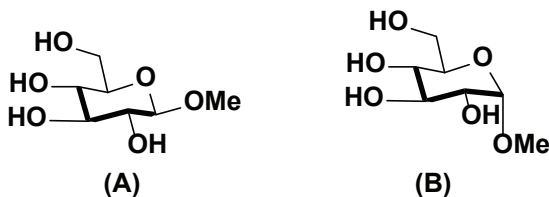
73. The major product formed in the following reaction is



74. The most stable conformation of the following compound is

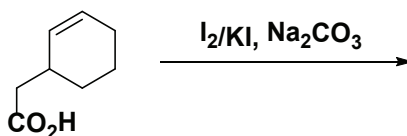


75. The major product formed in the reaction of D-glucose with ZnCl_2 in MeOH is a methyl glucopyranoside (A or B). The structure of this product and the molecular orbital interaction present between ring-oxygen and the anomeric C–O bond responsible for its stability, respectively, are

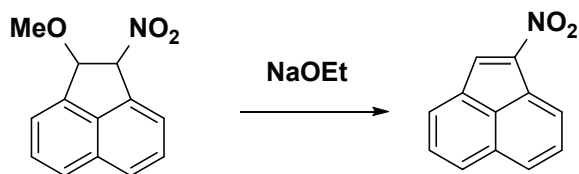


- (A) A and $n \rightarrow \sigma^*$ (B) A and $n \rightarrow \sigma$
 (C) B and $n \rightarrow \sigma^*$ (D) B and $n \rightarrow \sigma$

76. The major product formed in the reaction given below is:



77. The reaction given below is an example of

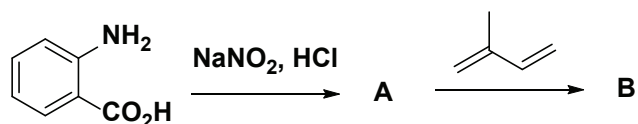


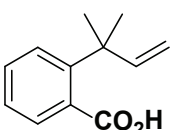
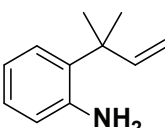
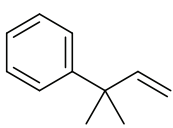
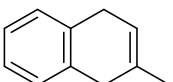
- (A) E_2 -elimination (B) E_1 -elimination
 (C) syn-elimination (D) E_1CB -elimination

78. In the mass spectrum of dichlorobenzene the ratio of the peaks at m/z 146, 148 and 150, is:

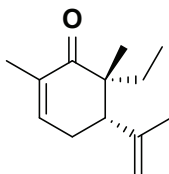
- (A) 1:1:1 (B) 3:3:1
(C) 1:2:1 (D) 9:6:1

79. The intermediate A and the major product B in the following conversion are



- (A) A is carbocation and B is 
(B) A is a carbanion and B is 
(C) A is a free radical and B is 
(D) A is benzyne and B is 

80. The absolute configuration of the two stereogenic (chiral) centres in the following molecule is



- (A) 5R, 6R (B) 5R, 6S
(C) 5S, 6R (D) 5S, 6S

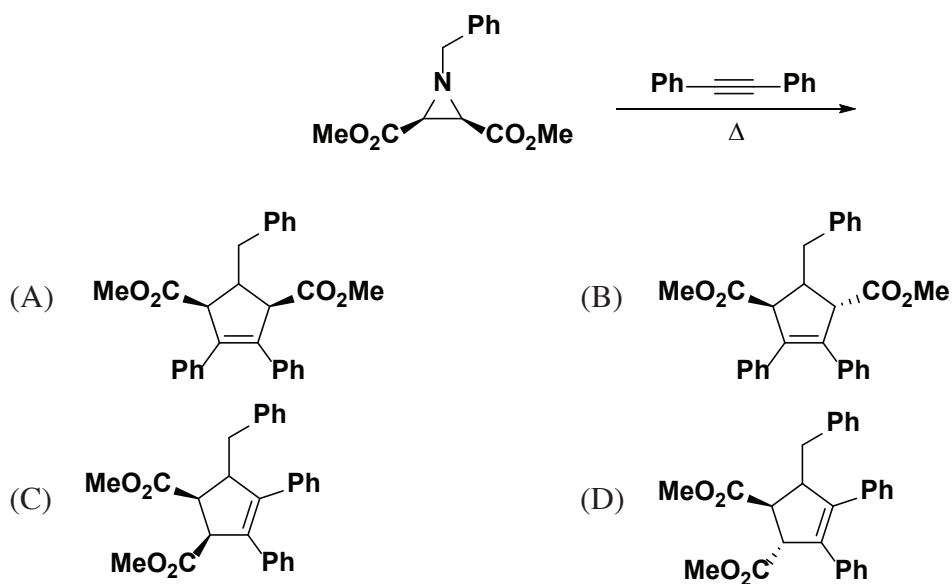
81. The most appropriate reagent suitable for the conversion of 2-octyne into trans-2-octene is

- (A) zinc and acetic acid (B) 10% Pd/C
(C) lithium in liquid ammonia (D) hydrazine hydrate

82. The biosynthetic precursor for the steroids is

- (A) secologanin (B) shikimic acid
(C) mevalonic acid (D) α -ketoglutaric acid

83. The major product formed in the following reaction is



84. The shape of SCN^- is

- (A) linear (B) bent
(C) pyramidal (D) trigonal planar

85. A pair of isosteric compounds is

- (A) H_2NBH_2 and C_2H_6 (B) $\text{H}_3\text{N}\cdot\text{BH}_3$ and C_2H_6
(C) B_2H_6 and C_2H_6 (D) $\text{H}_3\text{N}\cdot\text{BH}_3$ and B_2H_6

86. Among the following compounds, a normal spinel is

- (A) MgFe_2O_4 (B) ZnFe_2O_4
(C) CoFe_2O_4 (D) CuFe_2O_4

87. Identify the correct statement(s) for $\text{H}_3\text{B}\cdot\text{CO}$.

- (x) sp^2 hybridized orbital of B accepts the lone pair of CO.
(y) Its ν_{CO} value is more than that for free CO.
(z) Formal oxidation state of C is +4 in the compound.

Answer is

- (A) (x) and (y) (B) (y) only
(C) (x) only (D) (x) and (z)

88. The number of P–H bonds in hypophosphorus acid is

- (A) 1 (B) 2
(C) 3 (D) 4

89. The active sites of dioxygen carriers, hemocyanin and hemerythrin contain

- (A) Cu and Cu, respectively
(B) Co and Fe, respectively
(C) Fe and Fe, respectively
(D) Cu and Fe, respectively

90. Choose the correct option for carbonyl fluoride with respect to bond angle and bond length

- (A) $\angle\text{F-C-F} > \angle\text{F-C-O}$ and $\text{C-F} > \text{C-O}$
(B) $\angle\text{F-C-F} > \angle\text{F-C-O}$ and $\text{C-F} < \text{C-O}$
(C) $\angle\text{F-C-F} < \angle\text{F-C-O}$ and $\text{C-F} > \text{C-O}$
(D) $\angle\text{F-C-F} < \angle\text{F-C-O}$ and $\text{C-F} < \text{C-O}$

91. The correct statement regarding the thermodynamic stability and kinetic reactivity of metal ion complexes is that
- More stable complexes are less reactive
 - There exists a dependence on the bulkiness of the ligand
 - There exists no direct relation between these two phenomena
 - There exists a dependence on the size of the metal ion
92. The correct classification of $[B_5H_5]^{2-}$, B_5H_9 and B_5H_{11} respectively is
- closo, arachno, nido
 - arachno, closo, nido
 - closo, nido, arachno
 - nido, arachno, closo
93. The reaction of $[PtCl_4]^{2-}$ with NH_3 , gives rise to
- $[PtCl_4(NH_3)_2]^{2-}$
 - trans- $[PtCl_2(NH_3)_2]$
 - $[PtCl_2(NH_3)_4]$
 - cis- $[PtCl_2(NH_3)_2]$
94. The total number of isomers of $Co(en)_2Cl_2$ (en = ethylenediamine) is
- 4
 - 3
 - 6
 - 5
95. The point group of NSF_3 is:
- D_{3d}
 - C_{3h}
 - D_{3h}
 - C_{3v}
96. Schrock carbenes are
- Triplets and nucleophilic
 - Triplets and electrophilic
 - Singlets and nucleophilic
 - Singlets and electrophilic
97. The correct statement about the Cu-N bond distances in $[Cu(NH_3)_6]^{2+}$ is
- All the bond distances are equal
 - The axial bonds are longer than the equatorial ones
 - The equatorial bonds are longer than the axial ones
 - All the bond distances are unequal

98. The number of unpaired electron(s) present in the species $[\text{Fe}(\text{H}_2\text{O})_5(\text{NO})]^{2+}$ which is formed during 'brown ring test' is
- (A) 2 (B) 3
(C) 4 (D) 5
99. The crystal field stabilization energy (CFSE) value for $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ that has an absorption maximum at 492 nm is
- (A) $20,325 \text{ cm}^{-1}$ (B) $12,195 \text{ cm}^{-1}$
(C) $10,162 \text{ cm}^{-1}$ (D) $8,130 \text{ cm}^{-1}$
100. The increasing order of melting points of the halides NaCl, CuCl and NaF is:
- (A) $\text{CuCl} < \text{NaCl} < \text{NaF}$ (B) $\text{NaF} < \text{NaCl} < \text{CuCl}$
(C) $\text{NaF} < \text{CuCl} < \text{NaCl}$ (D) $\text{CuCl} < \text{NaF} < \text{NaCl}$

ROUGH WORK

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