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Test Booklet Code : **48**

NEET-UG : 2025

Question with Solution

Date : 04.05.2025

4452344 Test Booklet No.

NARMADA

Test Booklet Code

48

ENGLISH

Do not open this Test Booklet until you are asked to do so.

This Booklet contains 32 pages, including Rough Page.

Important Instructions:

1. The Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars on ORIGINAL Copy carefully with **blue/black** ball point pen only.
2. The test is of **3 hours** duration and the Test Booklet contains **180** multiple-choice questions (four options with a single correct answer) from **Physics, Chemistry and Biology (Botany and Zoology).**
3. Wherever the symbols/constants are not mentioned, they are to be considered as per their standard meaning/ value.
4. Each question carries **4** marks. For each correct response, the candidate will get **4** marks. For each incorrect response, one mark will be deducted from the total scores. **The maximum marks are 720.**
5. Use **Blue/Black Ball Point Pen only** for writing particulars on this page/marking responses on Answer Sheet.
6. Rough work is to be done in the space provided for this purpose in the Test Booklet only.
7. On completion of the test, the candidate **must hand over the Answer Sheet (ORIGINAL and OFFICE Copy) to the Invigilator** before leaving the Room/ Hall. The candidates are allowed to take away this Test Booklet with them.
8. **The CODE for this Booklet is "48". Make sure to enter this code in the OMR answer sheet.**
9. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your Roll No. anywhere else except in the specified space in the Test Booklet/ Answer Sheet.
10. Use of white fluid for correction is **NOT** permissible on the Answer Sheet.
11. Each candidate must show on-demand his/her Admit Card to the Invigilator.
12. No candidate, without special permission of the centre Superintendent or Invigilator, would leave his/her seat.
13. The candidates should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty and sign (with time) the Attendance Sheet **twice. Cases, where a candidate has not signed the Attendance Sheet second time, will be deemed not to have handed over the Answer Sheet and dealt with as an Unfair Means case.**
14. Use of Electronic/Manual Calculator is prohibited.
15. The candidates are governed by all Rules and Regulations of the examination with regard to their conduct in the Examination Room/Hall. All cases of unfair means will be dealt with as per the Rules and Regulations of this examination along with Public Examinations (Prevention of unfair means act 2024).
16. **No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.**
17. The candidates will write the Correct Test Booklet Code as given in the Test Booklet/Answer Sheet in the Attendance Sheet.
18. If a candidate marks more than one answers for a question in the **OMR Sheet**, it will be treated as incorrect and negative marking will be applicable.

Name of the Candidate (in Capitals) : ....

Roll Number : in figures ....

: in words ....

Centre of Examination (in Capitals) : ....

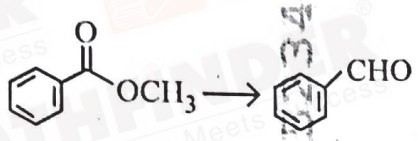
Candidate's Signature : .... Invigilator's Signature : ....

Facsimile signature stamp of Centre Superintendent : ....

1

48_English] [Contd...

46 Identify the suitable reagent for the following conversion.



(1) (i) $NaBH_4$, (ii) H^+/H_2O

(2) H_2 / Pd-$BaSO_4$

(3) (i) $LiAlH_4$, (ii) H^+/H_2O

(4) (i) $AlH(iBu)_2$ (ii) H_2O

47 The correct order of decreasing acidity of the following aliphatic acids is :

(1) $HCOOH > CH_3COOH > (CH_3)_2CHCOOH > (CH_3)_3CCOOH$

(2) $HCOOH > (CH_3)_3CCOOH > (CH_3)_2CHCOOH > CH_3COOH$

(3) $(CH_3)_3CCOOH > (CH_3)_2CHCOOH > CH_3COOH > HCOOH$

(4) $CH_3COOH > (CH_3)_2CHCOOH > (CH_3)_3CCOOH > HCOOH$

48 Which one of the following reactions does **NOT** belong to "Lassaigne's test"?

(1) $Na + X \xrightarrow{\Delta} +NaX$

(2) $2CuO + C \xrightarrow{\Delta} 2Cu + CO_2$

(3) $Na + C + N \xrightarrow{\Delta} NaCN$

(4) $2Na + S \xrightarrow{\Delta} Na_2S$

49 If the rate constant of a reaction is 0.03 s^{-1}, how much time does it take for 7.2 mol L^{-1} concentration of the reactant to get reduced to 0.9 mol L^{-1}?

(Given: log 2 = 0.301)

(1) 210 s (2) 21.0 s

(3) 69.3 s (4) 23.1 s

50 Given below are two statements :

Statement I : A hypothetical diatomic molecule with bond order zero is quite stable.

Statement II : As bond order increases, the bond length increases.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Statement I is true but Statement II is false

(2) Statement I is false but Statement II is true

(3) Both Statement I and Statement II are true

(4) Both Statement I and Statement II are false

51 Out of the following complex compounds, which of the compound will be having the minimum conductance in solution?

(1) $[Co(NH_3)_6]Cl_3$

(2) $[Co(NH_3)_5Cl]Cl$

(3) $[Co(NH_3)_3Cl_3]$

(4) $[Co(NH_3)_4Cl_2]$

52 Which of the following aqueous solution will exhibit highest boiling point?

(1) 0.01M Na_2SO_4

(2) 0.015M $C_6H_{12}O_6$

(3) 0.01M Urea

(4) 0.01M KNO_3

53 Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) :  I undergoes S_N2 reaction faster than Cl.

Reason (R) : Iodine is a better leaving group because of its large size.

In the light of the above statements, choose the **correct** answer from the options given below :

(1) **A** is true but **R** is false

(2) **A** is false but **R** is true

(3) Both **A** and **R** are true and **R** is the correct explanation of **A**

(4) Both **A** and **R** are true but **R** is **not** the correct explanation of **A**

54 Consider the following compounds :

$\underline{K}O_2$, $H_2\underline{O}_2$ and $H_2\underline{S}O_4$.

The oxidation states of the underlined elements in them are, respectively,

(1) +1, –2, and +4

(2) +4, –4, and +6

(3) +1, –1, and +6

(4) +2, –2, and +6

55 Match **List - I** with **List - II**

List-I	**List-II**
A. Haber process	I. Fe catalyst
B. Wacker oxidation	II. $PdCl_2$
C. Wilkinson catalyst	III. $[(PPh_3)_3RhCl]$
D. Ziegler catalyst	IV. $TiCl_4$ with $Al(CH_3)_3$

Choose the **correct** answer from the options given below :

(1) A-I, B-II, C-III, D-IV

(2) A-I, B-IV, C-III, D-II

(3) A-I, B-II, C-IV, D-III

(4) A-II, B-III, C-I, D-IV

56 Given below are two statements :

Statement I : Like nitrogen that can form ammonia, arsenic can form arsine.

Statement II : Antimony cannot form antimony pentoxide.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Statement I is correct but Statement II is incorrect

(2) Statement I is incorrect but Statement II is correct

(3) Both Statement I and Statement II are correct

(4) Both Statement I and Statement II are incorrect

57 Given below are two statements :

Statement I : Ferromagnetism is considered as an extreme form of paramagnetism.

Statement II : The number of unpaired electrons in a Cr^{2+} ion ($Z = 24$) is the same as that of a Nd^{3+} ion ($Z = 60$).

In the light of the above statements, choose the **correct** answer from the options given below :

(1) Statement I is true but Statement II is false

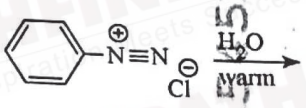
(2) Statement I is false but Statement II is true

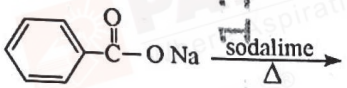
(3) Both Statement I and Statement II are true

(4) Both Statement I and Statement II are false

58 Which one of the following reactions does **NOT** give benzene as the product ?

(1) $H-C\equiv C-H \xrightarrow[\text{at 873 K}]{\text{red hot Iron Tube}}$

(2)  $\xrightarrow[\text{warm}]{H_2O}$

(3) 

(4) 

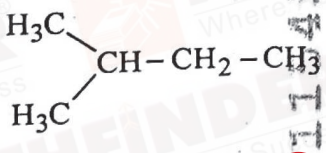
59 Match **List - I** with **List - II**

	List-I		List-II
A.	XeO_3	I.	sp^3d; linear
B.	XeF_2	II.	sp^3; pyramidal
C.	$XeOF_4$	III.	sp^3d^3; distorted octahedral
D.	XeF_6	IV.	sp^3d^2; square pyramidal

Choose the **correct** answer from the options given below :

(1) A-IV, B-II, C-III, D-I
(2) A-IV, B-II, C-I, D-III
(3) A-II, B-I, C-IV, D-III
(4) A-II, B-I, C-III, D-IV

60 How many products (including stereoisomers) are expected from monochlorination of the following compound?



(1) 5 (2) 6
(3) 2 (4) 3

61 Which of the following statements are true?

A. Unlike Ga that has a very high melting point, Cs has a very low melting point.
B. On Pauling scale, the electronegativity values of N and Cl are not the same.
C. Ar, K^+, Cl^-, Ca^{2+}, and S^{2-} are all isoelectronic species.
D. The correct order of the first ionization enthalpies of Na, Mg, Al, and Si is Si > Al > Mg > Na.
E. The atomic radius of Cs is greater than that of Li and Rb.

Choose the **correct** answer from the options given below :

(1) C and D only
(2) A, C, and E only
(3) A, B, and E only
(4) C and E only

62 The standard heat of formation, in kcal/mol of Ba^{2+} is :

[Given : standard heat of formation of SO_4^{2-} ion (aq) = – 216 kcal/mol, standard heat of crystallisation of $BaSO_4$(s) = – 4.5 kcal/mol, standard heat of formation of $BaSO_4$(s) = – 349 kcal/mol]

(1) + 133.0 (2) + 220.5
(3) – 128.5 (4) – 133.0

63 Match **List - I** with **List - II**

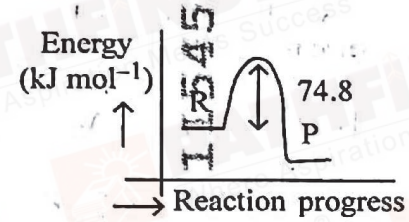
	List-I (Example)		List-II (Type of Solution)
A.	Humidity	I.	Solid in solid
B.	Alloys	II.	Liquid in gas
C.	Amalgams	III.	Solid in gas
D.	Smoke	IV.	Liquid in solid

Choose the **correct** answer from the options given below :

(1) A-III, B-I, C-IV, D-II
(2) A-III, B-II, C-I, D-IV
(3) A-II, B-IV, C-I, D-III
(4) A-II, B-I, C-IV, D-III

64 $C(s)+2H_2(g) \rightarrow CH_4(g)$; $\Delta H = -74.8\ kJ\ mol^{-1}$

Which of the following diagrams gives an accurate representation of the above reaction?
[R → reactants; P → products]

(1)


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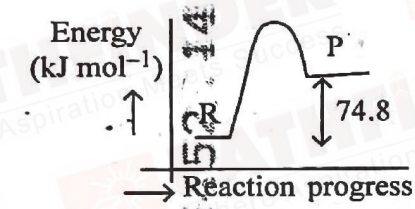
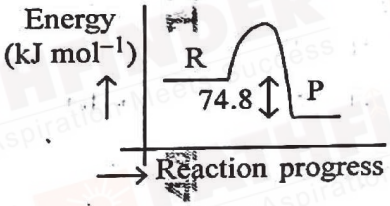
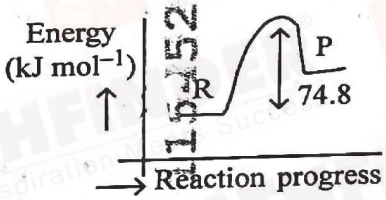


(3)


(4)


65 Sugar 'X'

A. is found in honey.
B. is a keto sugar.
C. exists in α and β - anomeric forms.
D. is laevorotatory.

'X' is :

(1) Maltose (2) Sucrose
(3) D-Glucose (4) D-Fructose

66 Total number of possible isomers (both structural as well as stereoisomers) of cyclic ethers of molecular formula C_4H_8O is :

(1) 10 (2) 11
(3) 6 (4) 8

67 For the reaction $A(g) \rightleftharpoons 2B(g)$, the backward reaction rate constant is higher than the forward reaction rate constant by a factor of 2500, at 1000 K.

[Given : R = 0.0831 L atm mol^{-1} K^{-1}]

K_P for the reaction at 1000 K is

(1) 0.033 (2) 0.021
(3) 83.1 (4) 2.077×10^5

68 The ratio of the wavelengths of the light absorbed by a Hydrogen atom when it undergoes $n = 2 \rightarrow n = 3$ and $n = 4 \rightarrow n = 6$ transitions, respectively, is

(1) $\frac{1}{9}$ (2) $\frac{1}{4}$
(3) $\frac{1}{36}$ (4) $\frac{1}{16}$

69 If the molar conductivity (Λ_m) of a 0.050 mol L^{-1} solution of a monobasic weak acid is 90 S cm^2 mol^{-1}, its extent (degree) of dissociation will be

[Assume $\Lambda^\circ_+ = 349.6\ S\ cm^2\ mol^{-1}$ and $\Lambda^\circ_- = 50.4\ S\ cm^2\ mol^{-1}$.]

(1) 0.225 (2) 0.215
(3) 0.115 (4) 0.125

70 5 moles of liquid X and 10 moles of liquid Y make a solution having a vapour pressure of 70 torr The vapour pressures of pure X and Y are 63 torr and 78 torr respectively. Which of the following is true regarding the described solution?
(1) The solution is ideal.
(2) The solution has volume greater than the sum of individual volumes.
(3) The solution shows positive deviation.
(4) The solution shows negative deviation.

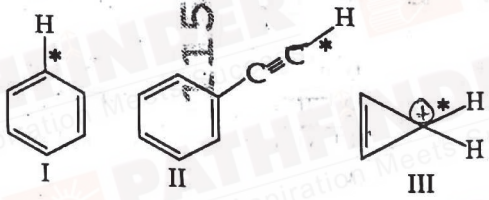
71 Among the following, choose the ones with equal number of atoms.
A. 212 g of Na_2CO_3 (s) [molar mass = 106 g]
B. 248 g of Na_2O (s) [molar mass = 62 g]
C. 240 g of NaOH (s) [molar mass = 40 g]
D. 12 g of H_2 (g) [molar mass = 2 g]
E. 220 g of CO_2(g) [molar mass = 44 g]
Choose the **correct** answer from the options given below :
(1) B, C, and D only
(2) B, D, and E only
(3) A, B, and C only
(4) A, B, and D only

72 Which of the following are paramagnetic?
A. $[NiCl_4]^{2-}$ B. $Ni(CO)_4$
C. $[Ni(CN)_4]^{2-}$ D. $[Ni(H_2O)_6]^{2+}$
E. $Ni(PPh_3)_4$
Choose the **correct** answer from the options given below:
(1) A and D only
(2) A, D and E only
(3) A and C only
(4) B and E only

73 If the half-life ($t_{1/2}$) for a first order reaction is 1 minute, then the time required for 99.9% completion of the reaction is closest to :
(1) 5 minutes (2) 10 minutes
(3) 2 minutes (4) 4 minutes

74 Energy and radius of first Bohr orbit of He^+ and Li^{2+} are
[Given $R_H = 2.18 \times 10^{-18}$ J, $a_0 = 52.9$ pm]
(1) $E_n(Li^{2+}) = -19.62\times10^{-16}$ J;
$r_n(Li^{2+}) = 17.6$ pm
$E_n(He^+) = -8.72\times10^{-16}$ J;
$r_n(He^+) = 26.4$ pm
(2) $E_n(Li^{2+}) = -8.72\times10^{-16}$ J;
$r_n(Li^{2+}) = 17.6$ pm
$E_n(He^+) = -19.62\times10^{-16}$ J;
$r_n(He^+) = 17.6$ pm
(3) $E_n(Li^{2+}) = -19.62\times10^{-18}$ J;
$r_n(Li^{2+}) = 17.6$ pm
$E_n(He^+) = -8.72\times10^{-18}$ J;
$r_n(He^+) = 26.4$ pm
(4) $E_n(Li^{2+}) = -8.72\times10^{-18}$ J;
$r_n(Li^{2+}) = 26.4$ pm
$E_n(He^+) = -19.62\times10^{-18}$ J;
$r_n(He^+) = 17.6$ pm

75 Among the given compounds I-III, the correct order of bond dissociation energy of C–H bond marked with * is:



(1) III > II > I (2) II > III > I
(3) II > I > III (4) I > II > III

76 Dalton's Atomic theory could not explain which of the following?
(1) Law of multiple proportion
(2) Law of gaseous volume
(3) Law of conservation of mass
(4) Law of constant proportion

77 Identify the correct orders against the property mentioned

A. $H_2O > NH_3 > CHCl_3$ – dipole moment
B. $XeF_4 > XeO_3 > XeF_2$ – number of lone pairs on central atom
C. O–H > C–H > N–O – bond length
D. $N_2 > O_2 > H_2$ – bond enthalpy

Choose the **correct** answer from the options given below :

(1) A, C only (2) B, C only
(3) A, D only (4) B, D only

78 Match **List I** with **List II.**

	List I (Name of Vitamin)		**List II (Deficiency disease)**
A.	Vitamin B_{12}	I.	Cheilosis
B.	Vitamin D	II.	Convulsions
C.	Vitamin B_2	III.	Rickets
D.	Vitamin B_6	IV.	Pernicious anaemia

Choose the **correct** answer from the options given below :

(1) A-II, B-III, C-I, D-IV
(2) A-IV, B-III, C-II, D-I
(3) A-I, B-III, C-II, D-IV
(4) A-IV, B-III, C-I, D-II

79 The correct order of decreasing basic strength of the given amines is :

(1) N-ethylethanamine > ethanamine > N-methylaniline > benzenamine
(2) benzenamine > ethanamine > N-methylaniline > N-ethylethanamine
(3) N-methylaniline > benzenamine > ethanamine > N-ethylethanamine
(4) N-ethylethanamine > ethanamine > benzenamine > N-methylaniline

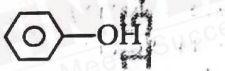
80 The correct order of the wavelength of light absorbed by the following complexes is,

A. $[Co(NH_3)_6]^{3+}$ B. $[Co(CN)_6]^{3-}$
C. $[Cu(H_2O)_4]^{2+}$ D. $[Ti(H_2O)_6]^{3+}$

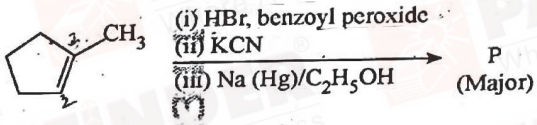
Choose the **correct** answer from the options given below:

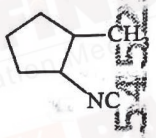
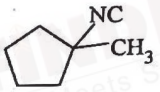
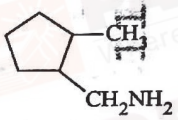
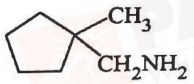
(1) C < D < A < B (2) C < A < D < B
(3) B < D < A < C (4) B < A < D < C

81 Which one of the following compounds **does not** decolourize bromine water?

(1) 
(2) 
(3) 
(4) 

82 Predict the major product 'P' in the following sequence of reactions -



(1) 
(2) 
(3) 
(4) 

83 Match **List I** with **List II**

	List I (Mixture)		**List II (Method of Separation)**
A.	$CHCl_3 + C_6H_5NH_2$	I.	Distillation under reduced pressure
B.	Crude oil in petroleum industry	II.	Steam distillation
C.	Glycerol from spent-lye	III.	Fractional distillation
D.	Aniline - water	IV.	Simple distillation

Choose the **correct** answer from the options given below :

(1) A-III, B-IV, C-I, D-II
(2) A III, B-IV, C-II, D-I
(3) A-IV, B-III, C-I, D-II
(4) A-IV, B-III, C-II, D-I

84 Which among the following electronic configurations belong to main group elements?

A. $[Ne]3s^1$ B. $[Ar]3d^3 4s^2$

C. $[Kr]4d^{10} 5s^2 5p^5$ D. $[Ar]3d^{10} 4s^1$

E. $[Rn]5f^0 6d^2 7s^2$

Choose the **correct** answer from the option given below :

(1) D and E only
(2) A, C and D only
(3) B and E only
(4) A and C only

85 Which one of the following compounds can exist as cis-trans isomers?

(1) 1,1-Dimethylcyclopropane
(2) 1,2-Dimethylcyclohexane
(3) Pent-1-ene
(4) 2-Methylhex-2-ene

86 Phosphoric acid ionizes in three steps with their ionization constant values

K_{a_1}, K_{a_2} and K_{a_3}, respectively,

while K is the overall ionization constant. Which of the following statements are true?

A. $\log K = \log K_{a_1} + \log K_{a_2} + \log K_{a_3}$

B. H_3PO_4 is a stronger acid than $H_2PO_4^-$ and HPO_4^{2-}.

C. $K_{a_1} > K_{a_2} > K_{a_3}$

D. $K_{a_1} = \frac{K_{a_3} + K_{a_2}}{2}$

Choose the **correct** answer from the options given below:

(1) B, C and D only
(2) A, B and C only
(3) A and B only
(4) A and C only

87 Match **List I** with **List II**

List I (Ion)		**List II (Group Number in Cation Analysis)**
A.	Co^{2+}	I. Group-I
B.	Mg^{2+}	II. Group-III
C.	Pb^{2+}	III. Group-IV
D.	Al^{3+}	IV. Group-VI

Choose the **correct** answer from the options given below:

(1) A-III, B-II, C-IV, D-I
(2) A-III, B-II, C-I, D-IV
(3) A-III, B-IV, C-II, D-I
(4) A-III, B-IV, C-I, D-II

88 Higher yield of NO in

$N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$ can be obtained at

[ΔH of the reaction = + 180.7 kJ mol^{-1}]

A. higher temperature
B. lower temperature
C. higher concentration of N_2
D. higher concentration of O_2

Choose the **correct** answer from the options given below:

(1) B, C, D only
(2) A, C, D only
(3) A, D only
(4) B, C only

89 Given below are two statements :

Statement I : Benzenediazonium salt is prepared by the reaction of aniline with nitrous acid at 273 - 278 K. It decomposes easily in the dry state.

Statement II : Insertion of iodine into the benzene ring is difficult and hence iodobenzene is prepared through the reaction of benzenediazonium salt with KI.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

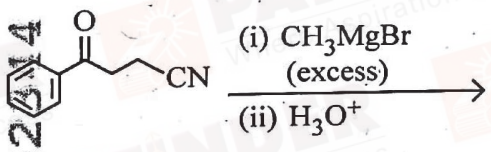
(1) Statement I is correct but Statement II is incorrect

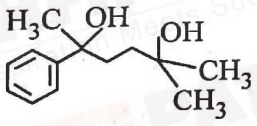
(2) Statement I is incorrect but Statement II is correct

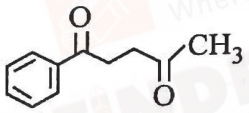
(3) Both Statement I and Statement II are correct

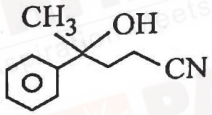
(4) Both Statement I and Statement II are incorrect

90 The major product of the following reaction is:



(1) 

(2) 

(3) 

(4)