# UNIVERSITY OF MYSORE
## Ph.D. Entrance Examination, October - 2017

SUBJECT CODE : **4 4**

Entrance Reg. No.

### QUESTION BOOKLET
(Read carefully the instructions given in the Question Booklet)

SUBJECT : **CHEMISTRY**

**MAXIMUM MARKS : 100**

**MAXIMUM TIME : THREE HOURS**

(Including initial 10 minutes for filling O.M.R. Answer sheet)

### INSTRUCTIONS TO THE CANDIDATES
1. The sealed questions booklet containing 50 questions enclosed with O.M.R. Answer Sheet is given to you.
2. Verify whether the given question booklet is of the same subject which you have opted for examination.
3. Open the question paper seal carefully and take out the enclosed O.M.R. Answer Sheet outside the question booklet and fill up the general information in the O.M.R. Answer sheet. If you fail to fill up the details in the form of alphabet and signs as instructed, you will be personally responsible for consequences arising during scoring of your Answer Sheet.
4. During the examination:
   a) Read each question carefully.
   b) Determine the Most appropriate/correct answer from the four available choices given under each question.
   c) Completely darken the relevant circle against the Question in the O.M.R. Answer Sheet. For example, in the question paper if "C" is correct answer for Question No.8, then darken against Sl. No.8 of O.M.R. Answer Sheet using Blue/Black Ball Point Pen as follows:

   Question No. 8. Ⓐ Ⓑ ● Ⓓ (Only example) (Use Ball Pen only)
5. Rough work should be done only on the blank space provided in the Question Booklet. Rough work should not be done on the O.M.R. Answer Sheet.
6. If more than one circle is darkened for a given question, such answer is treated as wrong and no mark will be given. See the example in the O.M.R. Sheet.
7. The candidate and the Room Supervisor should sign in the O.M.R. Sheet at the specified place.
8. Candidate should return the original O.M.R. Answer Sheet and the university copy to the Room Supervisor after the examination.
9. Candidate can carry the question booklet and the candidate copy of the O.M.R. Sheet.
10. The calculator, pager and mobile phone are not allowed inside the examination hall.
11. **If a candidate is found committing malpractice, such a candidate shall not be considered for admission to the course and action against such candidate will be taken as per rules.**
### INSTRUCTIONS TO FILL UP THE O.M.R. SHEET
1. There is only one most appropriate/correct answer for each question.
2. For each question, only one circle must be darkened with BLUE or BLACK ball point pen only. Do not try to alter it.
3. Circle should be darkened completely so that the alphabet inside it is not visible.
4. Do not make any stray marks on O.M.R. Sheet.

ಗಮನಿಸಿ : ಸೂಚನೆಗಳ ಕನ್ನಡ ಆವೃತ್ತಿಯು ಈ ಪುಸ್ತಕದ ಹಿಂಭಾಗದಲ್ಲಿ ಮುದ್ರಿಸಲ್ಪಟ್ಟಿದೆ.

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**Note : Answer all the questions**

## Part - A

[50 × 1 = 50]

1) Errors that occurs due to equally affected measurements is called

    (A)   Random errors        (B)   Systematic errors

    (C)   Frequent error        (D)   Precision

2) In potentiometry which of the following considered as standard electrode?

    (A)   Calcium        (B)   Hydrogen

    (C)   Potassium        (D)   Copper

3) Which form of electrochemical measurement does not involve electrolysis?

    (A)   Potentiometry

    (B)   Electrogravimetry

    (C)   Coulometry

    (D)   Voltammetry

4) Which of the following statements concerning the apparatus routinely used for titration is INCORRECT?

    (A)  Pipette is used to transfer a fixed amount of a solution accurately

    (B)  Measuring cylinder is used to deliver variable volumes of a solution accurately.

    (C)  Electronic balance is used for fast and accurate weighing

    (D)  Volumetric flask is used to make up a certain solution to a specific volume accurately

5) Mobile phase can be
    (A)  Gas or liquid
    (B)  Solid or liquid
    (C)  Only solid
    (D)  Only gas

**6)** Which of the following statements about chromatography is correct?
(A) Paper chromatography is usually considered to be qualitative only, while gas chromatography can be qualitative or quantitative
(B) Paper chromatography and gas chromatography are both routinely used for quantitative analysis only
(C) Paper chromatography is usually considered to be quantitative only, while gas chromatography can be qualitative or quantitative
(D) Paper chromatography and gas chromatography are both routinely used for qualitative analysis only

**7)** Series that lie in infrared region of electromagnetic spectrum is
(A) Lyman series
(B) Ballmer series
(C) Bracket series
(D) Both (A) and (B)

**8)** Which of the following is the most suitable gas to use as a carrier gas in a gas chromatogram?
(A) Methane
(B) Carbon dioxide
(C) Oxygen
(D) Helium

**9)** High Performance Liquid Chromatography (HPLC) cannot be used to ........
(A) Separate types of organic pesticides
(B) Identify the various pigments from a leaf extract
(C) Determine the caffeine content of coffee samples
(D) Determine the mercury content of a fish sample

**10)** When heated, metal that results in change of state to gas is
(A) Si
(B) Al
(C) S
(D) P

**11)** The hybridization of orbitals of N atom in $NO_3^-$, $NO_2^+$ and $NH_4^+$ are respectively
(A) $sp^2$, $sp^3$, $sp$
(B) $sp$, $sp^2$, $sp^3$
(C) $sp^2$, $sp$, $sp^3$
(D) $sp$, $sp^3$, $sp^2$

**12)** The structure of $IF_7$ is
(A) Pentagonal bipyramid
(B) Square pyramid
(C) Trigonal bipyramid
(D) Octahedral

13) Which one of the following sets correctly represents the increase in the paramagnetic property of the ion?

(A) $Cu^{2+} < V^{2+} < Cr^{2+} < Mn^{2+}$

(B) $Cu^{2+} < Cr^{2+} < V^{2+} < Mn^{2+}$

(C) $Mn^{2+} < V^{2+} < Cr^{2+} < Cu^{2+}$

(D) $Mn^{2+} < Cu^{2+} < Cr^{2+} < V^{2+}$

14) Which one of the following exists in the oxidation state other than +3?

(A) B

(B) Al

(C) Ce

(D) Ga

15) The spin only magnetic moment value (in Bohr magneton units) of $Cr(CO)_6$ is

(A) 0

(B) 2.84

(C) 4.90

(D) 5.92

16) What is the oxidation state of Iron in Ferrocene?

(A) +4

(B) +2

(C) +1

(D) +3

17) Which of the following pictures best represents the polarity of organometallic compounds?

(A) R M

(B) $R^+ M^-$

(C) $R^- M^+$

(D) $R^+ M^+$

18) The shape of $X_eF_6$ is

(A) Octahedral

(B) Pentagonal bipyramidcal

(C) Stereochemically nonrigid

(D) $F^-$ bridged square pyramidal

19) The correct set of biological essential elements is,

(A) Fe, Mo, Cu, Zn

(B) Fe, Cu, Co, Ru

(C) Cu, Mn, Zn, Ag

(D) Fe, Ru, Zn, Mg
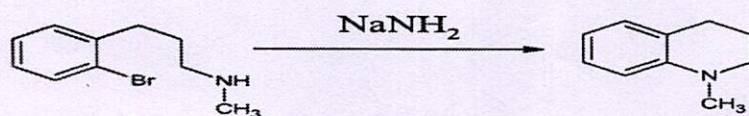
**20)** Name of the compound given below is
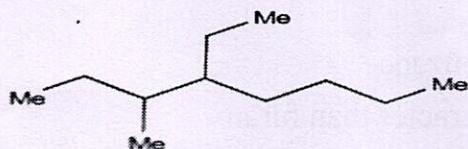


(A) 3-methyl-4-ethyloctane
(B) 2,3-diethylheptane
(C) 5-ethyl-6-methyloctane
(D) 4-ethyl-3-methyloctane

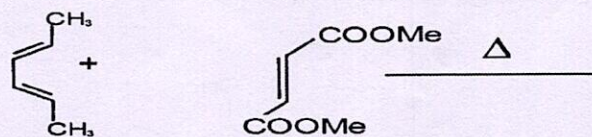**21)** The number of possible alcoholic isomers for $C_4H_{10}O$ are

(A) 4
(B) 3
(C) 2
(D) 5

**22)** The reactive intermediate involved in the following reaction



(A) Carbocation
(B) Carbanion
(C) Free radical
(D) An Aryne

**23)** Predict the product



(A)


(B)


(C)


(D)

**24)** Which of the following statement is correct

(A) Pyrrole is strong base

(B) Pyridine is isoelectric with benzene

(C) Pyrrole has less aromatic character than furan

(D) Pyridine is a tertiary amine
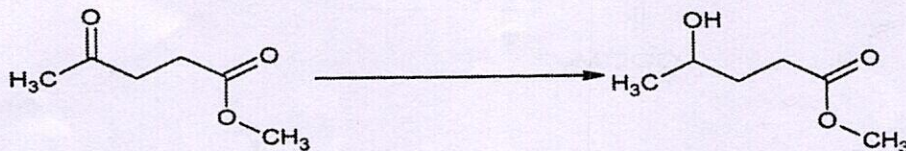
**25)** Oxidizing agents does not include

(A) Potassium iodide

(B) Potassium permanganate

(C) Potassium dichromate

(D) Bromine solution

**26)** Give the name of the rearrangement reaction for given reaction
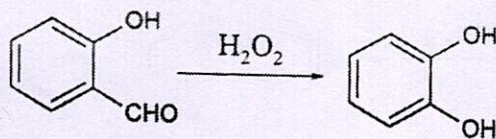


(A) Baeyer-villiger reaction

(B) Arndt-Eistert synthesis

(C) Dakin reaction

(D) Hoffman reaction

**27)** Which is the suitable reagent used for the below reaction



(A) $LiAlH_4$

(B) Zn-Hg

(C) $NaBH_4$

(D) None of these

**28)** Name the reaction that converts ketones/aldehydes into hydrocarbons

1. Clemenson's reduction    2.    Wolf kishner reduction

(A) Both 1 and 2 are correct

(B) Only 1 is correct

(C) Only 2 is correct

(D) None of these

29) Robinson annulation is a combination of _____ and followed by _____ reactions.
   (A) Cannizaro's reaction, aldol condensation
   (B) Michael addition and aldol condensation
   (C) Michael addition and perkins condensation
   (D) Aldol condensation and perkin's condensation

30) Gamma rays are
   (A) High energy electrons
   (B) Low energy electrons
   (C) High energy electromagnetic waves
   (D) High energy positrons

31) Loss of an $\alpha$ - particle is equivalent to
   (A) Loss of two neutrons
   (B) Loss of two protons
   (C) Loss of two neutrons and loss of two protons
   (D) None of the above

32) Tetragonal system is characterised by
   (A) Plane of symmetry          (B) Axis of symmetry
   (C) Centre of symmetry         (D) All the above

33) Which of the following have non crystalline structure?
   (A) Iron                       (B) Quartz
   (C) Silica glass               (D) Tungsten

34) Energy is absorbed by body in the form of
   (A) Photons                    (B) Quantas
   (C) Waves                      (D) Energy

35) If a salt bridge is removed between the two half cells, the voltage
   (A) Drops to zero              (B) Does not change
   (C) Increases gradually        (D) Increases rapidly

36) Stronger the oxidizing agent, greater is the
   (A) Reduction potential        (B) Oxidation potential
   (C) Ionic behaviour            (D) None of the above

37) The time required for 100% completion of a zero order reaction is
    (A)  a/2k                           (B)  ak
    (C)  2k/a                           (D)  a/k

38) The enthalpy of fusion of water is 1.435 kcal/mol. The molar entropy change
    for the melting of ice at $0°$ C is
    (A)  5.260 cal/(mol K)              (B)  0.526 cal/(mol K)
    (C)  10.52 cal/(mol K)             (D)  21.04 cal/(mol K)

39) Which polymer occurs naturally
    (A)  Starch and nylon              (B)  Starch and cellulose
    (C)  Proteins and nylon            (D)  Proteins and PVC

40) What is the degeneracy of the rotational energy level with $J = 4$ for a
    heteronuclear diatomic molecule?
    (A)  1                             (B)  2
    (C)  4                             (D)  9

41) Which of the following statements is wrong?
    (A)  UV absorption is attributable to electronic transitions
    (B)  UV spectra provide information about valence electrons
    (C)  IR absorption is attributable to transitions between rotational energy levels
         of whole molecules
    (D)  NMR spectrometers use radiofrequency electromagnetic radiation

42) Which of the following techniques would be most useful to identify and
    quantify the presence of a known impurity in a drug substance
    (A)  NMR                           (B)  Mass
    (C)  IR                            (D)  HPLC

43) Which is the correct order of increasing wave number of the stretching
    vibrations of (1) C-H (alkane), (2) O-H (alcohol), (3) C = O (ketone), and (4)
    $C \equiv C$ (alkyne)?
    (A)  (4) < (3) < (2) < (1)         (B)  (3) < (4) < (2) < (1)
    (C)  (3) < (4) < (1) < (2)         (D)  (4) < (3) < (1) < (2)

44) How many normal modes of vibrations are possible for a benzene molecule?
    (A)  6                             (B)  30
    (C)  12                            (D)  31

**45)** The different type of energies associated with the molecule are,

(A) Electronic energy

(B) Vibrational energy

(C) Rotational energy

(D) All of the above mentioned

**46)** Which of the following statements regarding mass spectrometry is wrong?

(A) In a normal mass spectrometer, electron impact causes a molecule to lose an electron and become a molecular radical cation which decomposes into fragment cations and radicals

(B) Only cations can be detected by a normal mass spectrometer

(C) A compound whose molecules contain just one bromine atom shows two molecular ion peaks of similar intensity, one at +1 and one at −1 of the average $m/z$ value

(D) Molecular ion peaks always have even-numbered values of $m/z$

**47)** In IR Spectroscopy which frequency range is known as the finger print region

(A) 1400-900 cm$^{-1}$

(B) 600-250 cm$^{-1}$

(C) 900-600 cm$^{-1}$

(D) 400-1400 cm$^{-1}$

**48)** Instrument used to collect ions is

(A) Electrometer

(B) Ionizer

(C) Spectrometer

(D) None

**49)** $^{13}$C NMR spectrum of a compound A contains 2 signals and in the proton NMR spectrum there is singlet which compound is consistent with these data

(A) Bromoethane

(B) Dichloromethane

(C) Ethanol

(D) Acetone

**50)** Which of the following compounds contains one or more protons that could undergo exchange with protons in water

(A) $CH_3OH$

(B) $CH_3Br$

(C) $(CH_3)_3N$

(D) $(CH_3)_2O$

## Part - B

[5 × 10 = 50]

**Answer the following questions :**

**1)** a) Calculate the electrode potential of a silver electrode immersed in a 0.0500M solution of NaCl using **[3]**

   i) $E°Ag^+/Ag = 0.799V$ and

   ii) $E°AgCl/Ag = 0.222V$. (Given Solubility product constant, $Ksp = 1.82 \times 10^{-10}$).

   b) With the help of a neat schematics, explain the principle and working of HPLC. **[3]**

   c) Draw the Jablonski diagram and explain the different luminescene processes. **[4]**

**2)** a) With the help of suitable examples, explain oxidative addition and 1,2 insertion in organometallic compounds. **[3]**

   b) Differentiate between homogeneous catalysts and heterogeneous catalysts and add a note on anchoring of catalysts. **[3]**

   c) Depict the MO diagram for $[FeF_6]^{3-}$ and $Fe[CN]_6^{3-}$ complexes involving both $\delta$ and $\pi$ bonding. Discuss its salient features and comment on its magnetic properties. **[4]**

**3)** a) Explain the mechanism and application of Michael addition reaction with suitable example. **[3]**

   b) Write a brief note on disconnection approach taking retro Diels-Alder reaction as an example. **[3]**

   c) Illustrate the reactions for the formation of carbocations? Discuss the factors affecting their stability. **[4]**

**4)  a)** Polyacetylene synthesized contains 5 different molecular weight polymeric chains. The four components of the polymer have 10, 12, 15, 18 and 20 numbers each with 500, 600, 750, 900 and 1000 molecular weight respectively. Calculate the average molecular weight of the polymer. **[3]**

  **b)** Derive Debye-Huckel limiting equation for strong electrolytes and explain its significance. **[3]**

  **c)** What is photosensitization? Discuss the mechanism involved in the dissociation of $H_2$ and photochemical decomposition of $CH_3CHO$. **[4]**


**5)  a)** What symmetry elements are observed in the following molecules? **[3]**

  i)    trans-1,2-dichloroethene,

  ii)   $CH_4$ and

  iii)  $[PtCl_4]^{2-}$

  **b)** What are fundamental vibrations, overtones and hot bands? Explain. **[3]**

  **c)** An organic compound with molecular formula $C_9H_{10}O_2$ shows the following spectral data: **[4]**

  Mass spectrum, m/z : 150, 135 (base peak)

  IR ($cm^{-1}$) : 1680;

  $^1$HNMR ($\delta$,ppm) : 2.3 (3H,s), 3.6(3H,s) and 6.4-7.5 (4H, dd, J = 8Hz).

  Deduce the structure of the compound.  .

<p style="text-align:center">❀ ❀ ❀</p>

## ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

1. ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಜೊತೆಗೆ 50 ಪ್ರಶ್ನೆಗಳನ್ನು ಹೊಂದಿರುವ ಮೊಹರು ಮಾಡಿದ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ನಿಮಗೆ ನೀಡಲಾಗಿದೆ.

2. ಕೊಟ್ಟಿರುವ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವು, ನೀವು ಪರೀಕ್ಷೆಗೆ ಆಯ್ಕೆ ಮಾಡಿಕೊಂಡಿರುವ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ್ದೇ ಎಂಬುದನ್ನು ಪರೀಶೀಲಿಸಿರಿ.

3. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಮೊಹರನ್ನು, ಜಾಗ್ರತೆಯಿಂದ ತೆರೆಯಿರಿ ಮತ್ತು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯಿಂದ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯನ್ನು ಹೊರಗೆ ತೆಗೆದು, ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಸಾಮಾನ್ಯ ಮಾಹಿತಿಯನ್ನು ತುಂಬಿರಿ. ಕೊಟ್ಟಿರುವ ಸೂಚನೆಯಂತೆ ನೀವು ನಮೂನೆಯಲ್ಲಿನ ವಿವರಗಳನ್ನು ತುಂಬಲು ವಿಫಲರಾದರೆ, ನಿಮ್ಮ ಉತ್ತರ ಹಾಳೆಯ ಮೌಲ್ಯಮಾಪನ ಸಮಯದಲ್ಲಿ ಉಂಟಾಗುವ ಪರಿಣಾಮಗಳಿಗೆ ವೈಯಕ್ತಿಕವಾಗಿ ನೀವೇ ಜವಾಬ್ದಾರರಾಗಿರುತ್ತೀರಿ.

4. ಪರೀಕ್ಷೆಯ ಸಮಯದಲ್ಲಿ:
   a) ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಯನ್ನು ಜಾಗ್ರತೆಯಿಂದ ಓದಿರಿ.
   b) ಪ್ರತಿ ಪ್ರಶ್ನೆಯ ಕೆಳಗೆ ನೀಡಿರುವ ನಾಲ್ಕು ಲಭ್ಯ ಆಯ್ಕೆಗಳಲ್ಲಿ ಅತ್ಯಂತ ಸರಿಯಾದ/ ಸೂಕ್ತವಾದ ಉತ್ತರವನ್ನು ನಿರ್ಧರಿಸಿ.
   c) ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಸಂಬಂಧಿಸಿದ ಪ್ರಶ್ನೆಯ ವೃತ್ತಾಕಾರವನ್ನು, ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬಿರಿ. ಉದಾಹರಣೆಗೆ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8ಕ್ಕೆ "C" ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದರೆ, ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಬಳಸಿ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಕ್ರಮ ಸಂಖ್ಯೆ 8ರ ಮುಂದೆ ಈ ಕೆಳಗಿನಂತೆ ತುಂಬಿರಿ:
   ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8.Ⓐ Ⓑ ● Ⓓ (ಉದಾಹರಣೆ ಮಾತ್ರ) (ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರ ಉಪಯೋಗಿಸಿ)

5. ಉತ್ತರದ ಪೂರ್ವಸಿದ್ಧತೆಯ ಬರವಣಿಗೆಯನ್ನು (ಚಿತ್ತು ಕೆಲಸ) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಒದಗಿಸಿದ ಖಾಲಿ ಜಾಗದಲ್ಲಿ ಮಾತ್ರವೇ ಮಾಡಬೇಕು (ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾಡಬಾರದು).

6. ಒಂದು ನಿರ್ದಿಷ್ಟ ಪ್ರಶ್ನೆಗೆ ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ವೃತ್ತಾಕಾರವನ್ನು, ಗುರುತಿಸಲಾಗಿದ್ದರೆ, ಅಂತಹ ಉತ್ತರವನ್ನು ತಪ್ಪು ಎಂದು ಪರಿಗಣಿಸಲಾಗುತ್ತದೆ ಮತ್ತು ಯಾವುದೇ ಅಂಕವನ್ನು ನೀಡಲಾಗುವುದಿಲ್ಲ. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಉದಾಹರಣೆ ನೋಡಿ.

7. ಅಭ್ಯರ್ಥಿ ಮತ್ತು ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರು ನಿರ್ದಿಷ್ಟಪಡಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯ ಮೇಲೆ ಸಹಿ ಮಾಡಬೇಕು.

8. ಅಭ್ಯರ್ಥಿಯು ಪರೀಕ್ಷೆಯ ನಂತರ ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರಿಗೆ ಮೂಲ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆ ಮತ್ತು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಪ್ರತಿಯನ್ನು, ಹಿಂದಿರುಗಿಸಬೇಕು.

9. ಅಭ್ಯರ್ಥಿಯು ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ಮತ್ತು ಓ.ಎಂ.ಆರ್. ಅಭ್ಯರ್ಥಿಯ ಪ್ರತಿಯನ್ನು, ತಮ್ಮ ಜೊತೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.

10. ಕ್ಯಾಲ್ಕುಲೇಟರ್, ಪೇಜರ್ ಮತ್ತು ಮೊಬೈಲ್ ಫೋನ್‌ಗಳನ್ನು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಒಳಗೆ ಅನುಮತಿಸಲಾಗುವುದಿಲ್ಲ.

11. **ಅಭ್ಯರ್ಥಿಯು ದುಷ್ಕೃತ್ಯದಲ್ಲಿ ತೊಡಗಿರುವುದು ಕಂಡುಬಂದರೆ, ಅಂತಹ ಅಭ್ಯರ್ಥಿಯನ್ನು ಕೋರ್ಸ್‌ಗೆ ಪರಿಗಣಿಸಲಾಗುವುದಿಲ್ಲ ಮತ್ತು ನಿಯಮಗಳ ಪ್ರಕಾರ ಇಂತಹ ಅಭ್ಯರ್ಥಿಯ ವಿರುದ್ಧ ಕ್ರಮ ಕೈಗೊಳ್ಳಲಾಗುವುದು.**

### ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯನ್ನು ತುಂಬಲು ಸೂಚನೆಗಳು

1. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೆ ಒಂದೇ ಒಂದು ಅತ್ಯಂತ ಸೂಕ್ತವಾದ/ಸರಿಯಾದ ಉತ್ತರವಿರುತ್ತದೆ.
2. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ವೃತ್ತವನ್ನು ಮಾತ್ರ ನೀಲಿ ಅಥವಾ ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಮಾತ್ರ ತುಂಬತಕ್ಕದ್ದು. ಉತ್ತರವನ್ನು ಮಾರ್ಪಡಿಸಲು ಪ್ರಯತ್ನಿಸಬೇಡಿ.
3. ವೃತ್ತದೊಳಗಿರುವ ಅಕ್ಷರವು ಕಾಣದಿರುವಂತೆ ವೃತ್ತವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬುವುದು.
4. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿ ಯಾವುದೇ ಅನಾವಶ್ಯಕ ಗುರುತುಗಳನ್ನು ಮಾಡಬೇಡಿ.

**Note** : English version of the instructions is printed on the front cover of this booklet.