



The Open University of Sri Lanka
Faculty of Natural Sciences
Department of Chemistry
Foundation Certificate Course in Science
CMF2205 - Assignment Test I – 2013/2014

Date: (Friday) 22. 11. 2013

Time: 2.30 pm - 4.00 pm

Instruction to candidates

- The paper consist of two parts , Part A (20 MCQ) and Part B (2-structured essay)
- Choose the most correct answer to each question and mark a cross “ X ” over the answer on the answer sheet.
- Any answer with more than one cross will not be counted.
- Each correct answer will get 3 marks
- 0.5 marks will be deducted for each incorrect answer.
- The use of a non programmable electronic calculator is permitted

ANSWER ALL QUESTIONS

සියළුම ප්‍රශ්නවලට පිළිතුරු සපයන්න.

PART - A

1. Which of the following pairs of elements is likely to form an ionic compound/compounds?:
 සහන සඳහන් මූලද්‍රව්‍ය යුගල අතුරින් අයනික සංයෝගයක්/සංයෝග සඳහන මූලද්‍රව්‍ය යුගල වනුයේ,
 - (a) Potassium and sodium පොටෑසියම් සහ සෝඩියම්
 - (b) Potassium and sulphur පොටෑසියම් සහ සල්ෆර්
 - (c) Chlorine and Iodine ක්ලෝරීන් සහ අයඩීන්
 - (d) Magnesium and bromine මැග්නීසියම් සහ බ්‍රෝමීන්

(1) a,b only (2) b,c only (3) c,d only (4) a,d only (5) b,d only

2. The electro negativity of the following elements increases in the order
 සහන මූලද්‍රව්‍යවල විද්‍යුත් ඝාණත්වය වැඩිවන පිළිවෙලට සකසන්න.

(1) N, C, Si, P (2) Si, P, C, N (3) N,C, P, Si (4) P, Si, C, N (5) Si, P,N,C

3. The correct order of second ionization potential of C,N,O,F, is
 C,N,O,F, හි දෙවන අයනීකරණ ශක්තිය නිවැරදි පිළිවෙල වනුයේ,

(1) C > N > O > F (2) F > C > N > O (3) O > F > N > C
 (4) O > F > C > N (5) O > N > C > F

9. The molecule which does not obey the octet rule .
අක්ෂික නියමයට පටහැනි අණුව වනුයේ

- (1) CO₂ (2) H₂O (3) O₂ (4) NO₂ (5) CO

10. Which molecules show increasing order in dipole moment
අණුවල ද්විධ්‍රැව ඝූර්ණය වැඩිවන පිළිවෙල වනුයේ,

- (1) H₂S < NH₃ < H₂O < HF (2) H₂S < H₂O < HF < NH₃
(3) H₂S < NH₃ < HF < H₂O (4) NH₃ < H₂S < H₂O < HF
(5) H₂O < H₂S < NH₃ < HF

11. NH₃, has a net dipole moment but BF₃ has zero dipole moment because.
NH₃ වලට සවිල ද්විධ්‍රැව ඝූර්ණයක් තිබුණ ද, BF₃ වලට පවතිනුයේ ශුන්‍ය ද්විධ්‍රැව ඝූර්ණයකි.

- (1) B is less electronegative than N
B හි විද්‍යුත් ඍණතාව N වලට වඩා අඩු නිසාය.
(2) NH₃ is pyramidal while BF₃ is trigonal planar
NH₃ පිරිමිඩාකාර වන අතර BF₃ තලීය ත්‍රිකෝණාකාර වන නිසාය.
(3) NH₃ is trigonal planar while BF₃ is pyramidal
NH₃ තලීය ත්‍රිකෝණාකාර වන අතර BF₃ පිරිමිඩාකාර වන නිසාය.
(4) F is more electronegative than H
F හි විද්‍යුත් ඍණතාව H වලට වඩා වැඩි නිසාය.
(5) Non of the Answer 1,2,3, and 4 are not correct.
ඉහත 1,2,3, සහ 4 යන සියලුම පිළිතුරු වැරදි වේ.

12. Which of the following is planar trigonal
තලීය ත්‍රිකෝණාකාර සංයෝගය වනුයේ

- (1) PCl₃ (2) NH₃ (3) ClF₃ (4) NO₂ (5) AlCl₃

13 . All of the following are true except :
පහත සත්‍ය වගන්ති අතරින් අසත්‍ය වනුයේ

- (1) An ion has a positive or negative charge.
අයනයකට ධන හෝ ඍණ ආරෝපණයක් ඇත.
(2) Metals tend to form positive ions.
ලෝහ ධන අයන සෑදීමට වැඩි නැඹුරුතාවක් ඇත.
(3) Ions are formed by adding electrons to a neutral atom.
උදාසීන පරමාණුවකට ඉලෙක්ට්‍රෝන ඇතුලත් කිරීමෙන් අයන සෑදේ.
(4) Ions are formed by changing the number of neutrons in an atom's nucleus.
පරමාණුක න්‍යෂ්ටියෙහි ඇති නියුට්‍රෝන ගණන වෙනස් කිරීමෙන් අයන සෑදේ.
(5) Ions are formed by removing electrons from a neutral atom.
උදාසීන පරමාණුවකින් ඉලෙක්ට්‍රෝන ඉවත් කිරීමෙන් අයන සෑදේ.

14. The order of increasing bond angle H_2O, NH_3, PH_3
 H_2O, NH_3, PH_3 හි ඛන්ධන කෝණය වැඩිවන පිළිවෙල වනුයේ

- (1) $H_2O > PH_3 > NH_3$ (2) $PH_3 > H_2O > NH_3$ (3) $H_2O < NH_3 < PH_3$
 (4) $PH_3 < NH_3 < H_2O$ (5) $PH_3 < H_2O < NH_3$

15. The H-B-H bond angel in BH_4^- is
 BH_4^- හි H-B-H ඛන්ධන කෝණය වනුයේ

- (1) 180° (2) 120° (3) 90° (4) 109° (5) 60°

16. According to the VSPER theory and identify a linear shape molecule is.
 VSPER නියමයට අනුව රේඛීය හැඩයක් ඇති අණුව වනුයේ

- (1) SO_2 (2) H_2O (3) ClF_3 (4) ClF_3 (5) CS_2

17. Which set gives the correct order in radii?
 අහඹු පිළිතුරු අතරින් අරයන්හි නිවැරදි පිළිවෙල ඇත්තේ

- (1) $N < Be < B$ (2) $Fe^{3+} < Fe^{2+} < Fe^{4+}$ (3) $Na < Li < K$ (4) $F < O^{2-} < N^{3-}$
 (5) None of the above/ ඉහත සියල්ල නොවේ.

18. Which one has sp^2 hybridisation?.
 sp^2 මුහුම්කරණය ඇත්තේ,

- (1) SO_2 (2) CO_2 (3) N_2O (4) ClF_3 (5) CO

19. The molecule which has a dipole moment, is ($\mu \neq 0$).
 අහඹු මුලද්වය අතරින් ද්විධ්‍රැව ක්ෂරණය ($\mu \neq 0$) වනුයේ

- (1) CCl_4 (2) CO_2 (3) SO_2 (4) AlF_3 (5) SiH_4

20. What is the electron configuration for the most stable ion of the element magnesium,
 Mg (Atomic number 12)?

මැග්නීසියම් මුලද්වයයේ, වඩාත් ස්ථායී අයනයෙහි ඉලෙක්ට්‍රෝන වින්‍යාසය වනුයේ (Mg පරමාණුක අංකය 12)

- (1) $1s^2 2s^2 2p^6 3s^2 3p^2$ (2) $1s^2 2s^2 2p^6$ (3) $1s^2 2s^2 2p^6 3s^2 3p^6$
 (4) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^2$ (5) $1s^2 2s^2 2p^6 3s^1$



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ANSWER ALL QUESTIONS

எல்லா வினாக்களுக்கும் விடையளிக்கുക.

PART - A

1. Which of the following pairs of elements is likely to form an ionic compound/compounds?
பின்வரும் மூலகங்களுள் அயன் சேர்வை / அயன் சேர்வைகளை உருவாக்கக்கூடிய சோடி?
(a) Potassium and sodium பொற்றாசியம், சோடியம்
(b) Potassium and sulphur பொற்றாசியம், சல்பர்
(c) Chlorine and Iodine குளோரீன், அயடின்
(d) Magnesium and bromine மக்னீசியம், புரோமீன்
(1) a,b only (2) b,c only (3) c,d only (4) a,d only (5) b,d only
2. The electro negativity of the following elements increases in the order
பின்வரும் மூலகங்களின் மின்னெதிர் தன்மை அதிகரிக்கும் ஒழுங்கு
(1) N, C, Si, P (2) Si, P, C, N (3) N,C, P, Si (4) P, Si, C, N (5) Si, P,N,C
3. The correct order of second ionization potential of C,N,O,F, is
C,N,O,F ஆகியவற்றின் இரண்டாம் அயனாக்கற் சக்தியின் சரியான ஒழுங்கைப் பிரதிபலிப்பது,?
(1) $C > N > O > F$ (2) $F > C > N > O$ (3) $O > F > N > C$
(4) $O > F > C > N$ (5) $O > N > C > F$
4. As we move from left to right across the period. The correct statement/ statements is/are
ஆவர்த்தன அட்டவணையின் இடதுபக்கத்திலிருந்து, வலதுபக்கத்தை நோக்கிச் செல்லுகையில்: மூலகங்களைப் பற்றிய சரியான கருத்து / கருத்துக்கள்
(i) Reducing power of elements increases/ மூலகங்களின் தாழ்த்தும் தன்மை அதிகரிக்கும்
(ii) Atomic size increases/ அணுப் பருமன் அதிகரிக்கும்
(iii) Basic nature of oxides decreases/ ஒட்சைட்டுக்களின் காரத்தன்மை குறைவடையும்
(1) (i) only (2) (iii) only (3) (ii) and (iii) only
(4) All(i), (ii) and (iii) (5) All incorrect

5. Which one of the following statements about atomic structure is false?

அணுக்களின் கட்டமைப்பு பற்றிய கூற்றுக்களுள் பிழையான கூற்று?

(1) The electrons occupy a very large volume compared to the nucleus.

கருவைவிட இலத்திரன்கள் அதிகளவில் காணப்படும்

(2) Almost all of the mass of the atom is concentrated in the nucleus.

பாரியளவு திணிவானது அணுவின் கருவில் செறிவாக்கப்பட்டுள்ளது.

(3) The number of protons and neutrons is always equal for all atoms of an element.

மூலகமொன்றில் காணப்படும் அணுக்களின் புரோத்தன் மற்றும் நியூத்திரன்களின் எண்ணிக்கை எப்போதும் சமனாகக் காணப்படும்.

(4) Electrons are in quantized energy levels.

இலத்திரன்கள் குறித்த சக்தி மட்டங்களில் மாத்திரம் காணப்படும்

(5) The protons and neutrons in the nucleus are very tightly packed

கருவில் காணப்படும் புரோத்தன்கள் மற்றும் நியூத்திரன்கள் மிக நெருக்கமாகக் காணப்படும்.

6. The first ionization energy of Cs is 376 kJ mol^{-1} . The maximum number of Cs^+ ions that can be produced for one joule (1J) of energy absorbed by $\text{Cs}_{(g)}$ atoms are.

Cs இன் முதலாம் அயனாக்கற் சக்தி 376 kJ mol^{-1} . $\text{Cs}_{(g)}$ அணுவால் 1 யூல் (1J) சக்தி உறிஞ்சப்படின் பிறப்பிக்கப்படும் Cs^+ அயன்களின் எண்ணிக்கை?

(1) 1.6×10^{18} (2) 1.6×10^{15} (3) 1.6×10^{12} (4) 1.6×10^{10} (5) 1.6×10^{16}

7. Which of the following has the strongest covalent bond?.

பின்வருவனவற்றில் மிக உறுதியான பங்கீட்டு வலுப்பிணைப்பைக் கொண்டது?

(1) C - Cl (2) Cl - Cl (3) H - Cl (4) Na-Cl (5) Br - Br

8. Which one of the following pairs of molecules will have permanent dipole moment?.

பின்வரும் மூலக்கூற்றுச் சோடிகளுள் நிரந்தரமான இரு முனைவுத் திறனைக் கொண்டவை?

(1) CO_2 and CCl_4 (2) NO_2 and CO_2
(3) CO_2 and O_3 (4) O_3 and NO_2 (5) SiF_4 and CCl_4

9. The molecule which does not obey the octet rule .

அட்டம விதியை பின்பற்றாத மூலக்கூறு?

(1) CO_2 (2) H_2O (3) O_2 (4) NO_2 (5) CO

10. Which molecules show increasing order in dipole moment

இருமுனைவுத் திறனில் அதிகரிக்கும் ஒழுங்கைக் காட்டும் மூலக்கூறுகள்?

(1) $\text{H}_2\text{S} < \text{NH}_3 < \text{H}_2\text{O} < \text{HF}$ (2) $\text{H}_2\text{S} < \text{H}_2\text{O} < \text{HF} < \text{NH}_3$
(3) $\text{H}_2\text{S} < \text{NH}_3 < \text{HF} < \text{H}_2\text{O}$ (4) $\text{NH}_3 < \text{H}_2\text{S} < \text{H}_2\text{O} < \text{HF}$
(5) $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{NH}_3 < \text{HF}$

11. NH_3 , has a net dipole moment but BF_3 has zero dipole moment because.
 NH_3 ஆனது விளைவு இருமுனைவுத்திறனைக் கொண்டது. ஆனால், BF_3 இன் இருமுனைவுத் திறனானது பூச்சியமாகும். அதற்கான காரணம்,
- (1) B is less electronegative than N
B இன் மின்னெதிர்ந்தன்மையானது N இலும் தாழ்வாகும்.
 - (2) NH_3 is pyramidal while BF_3 is trigonal planar
 NH_3 ஆனது நான்முகி ஆகவும் BF_3 ஆனது தளமுக்கோணி ஆகவும் காணப்படுவதால்
 - (3) NH_3 is trigonal planar while BF_3 is pyramidal
 NH_3 ஆனது தளமுக்கோணி ஆகவும் BF_3 நான்முகி ஆகவும் காணப்படுவதால்
 - (4) F is more electronegative than H
F ஆனது H இனிலும் மின்னெதிர்ந்தன்மையானது
 - (5) Non of the Answer 1,2,3,and 4 are not correct.
மேற்கூறிய 1, 2, 3 மற்றும் 4 விடைகள் யாவும் பிழையானவை.
12. Which of the following is planar trigonal
பின்வருவனவற்றில் எது தளமுக்கோண வடிவத்தைக் கொண்டது?
- (1) PCl_3 (2) NH_3 (3) ClF_3 (4) NO_2 (5) AlCl_3
13. All of the following are true except :
பின்வருவனவற்றில் பிழையான கூற்று,
- (1) An ion has a positive or negative charge.
அயனானது, நேரேற்றம் அல்லது மறையேற்றம் கொண்டது.
 - (2) Metals tend to form positive ions.
உலோகங்கள் நேரேற்ற அயன்களை உருவாக்கும்
 - (3) Ions are formed by adding electrons to a neutral atom.
நடுநிலையான அணுவொன்றிற்கு இலத்திரன்களை சேர்ப்பதன் மூலம் அயன்கள் உருவாகின்றன.
 - (4) Ions are formed by changing the number of neutrons in an atom's nucleus.
கருவொன்றில் காணப்படும் நியூத்திரன்களின் எண்ணிக்கையை மாற்றுவதன் மூலம் அயன்கள் உருவாகின்றன.
 - (5) Ions are formed by removing electrons from a neutral atom.
நடுநிலையான அணுவிலிருந்து இலத்திரன்களை அகற்றுவதன் மூலம் அயன்கள் உருவாகின்றன.
14. The order of increasing bond angle $\text{H}_2\text{O}, \text{NH}_3, \text{PH}_3$
 $\text{H}_2\text{O}, \text{NH}_3, \text{PH}_3$ ஆகியவற்றில் பிணைப்புக் கோணம் அதிகரிக்கும் ஒழுங்கு.
- (1) $\text{H}_2\text{O} > \text{PH}_3 > \text{NH}_3$ (2) $\text{PH}_3 > \text{H}_2\text{O} > \text{NH}_3$ (3) $\text{H}_2\text{O} < \text{NH}_3 < \text{PH}_3$
(4) $\text{PH}_3 < \text{NH}_3 < \text{H}_2\text{O}$ (5) $\text{PH}_3 < \text{H}_2\text{O} < \text{NH}_3$

15. 15. The H-B-H bond angle in BH_4^- is
 BH_4^- இல் H-B-H இன் பிணைப்புக் கோணமானது?
- (1) 180° (2) 120° (3) 90° (4) 109° (5) 60°
16. According to the VSEPR theory and identify a linear shape molecule is.
 VSEPR கொள்கையின்படி, நேர்கோட்டு வடிவைக் கொண்ட மூலக்கூறு?
- (1) SO_2 (2) H_2O (3) ClF_3 (4) ClF_3 (5) CS_2
17. Which set gives the correct order in radii?
 ஆரையின் சரியான ஒழுங்கைப் பிரதிபலிப்பது?
- (1) $\text{N} < \text{Be} < \text{B}$ (2) $\text{Fe}^{3+} < \text{Fe}^{2+} < \text{Fe}^{4+}$ (3) $\text{Na} < \text{Li} < \text{K}$ (4) $\text{F}^- < \text{O}^{2-} < \text{N}^{3-}$
 (5) None of the above/ மேற்கூறிய யாவும்ன்று.
18. Which one has sp^2 hybridisation?
 பின்வருவனவற்றில் sp^2 கலப்புடைய சேர்வை?
- (1) SO_2 (2) CO_2 (3) N_2O (4) ClF_3 (5) CO
19. The molecule which has a dipole moment, is ($\mu \neq 0$).
 இருமுனைவுத் திறனுடைய சேர்வையானது? ($\mu \neq 0$)
- (1) CCl_4 (2) CO_2 (3) SO_2 (4) AlF_3 (5) SiH_4
20. What is the electron configuration for the most stable ion of the element magnesium, Mg (Atomic number 12)?
 மக்னீசியத்தின் (Mg) மிக உறுதியான அயனின் இலத்திரன் நிலையமைப்பானது, (Mg அணுவெண் 12)
- (1) $1s^2 2s^2 2p^6 3s^2 3p^2$ (2) $1s^2 2s^2 2p^6$ (3) $1s^2 2s^2 2p^6 3s^2 3p^6$
 (4) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^2$ (5) $1s^2 2s^2 2p^6 3s^1$

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 CMF 2205 – Chemistry
 Assignment Test I

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Name :-

Ques. No	Max	Marks
MCQ	60	
01		
02		
Total	100	

This question paper consists of 2 PARTS A & B.

PART A carries 20 multiple choice questions. PART B carries two structured type questions.

ANSWER ALL QUESTIONS

INSTRUCTIONS:

Each item is a statement or question that may be answered by one of the five responses given.

There is only **one best** answer to every question. Mark a cross (X) over the most suitable answer.

For each correct response, **03** marks will be awarded. For each incorrect response, **0.5** marks will be deducted.

1.

1	2	3	4	5
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 2.

1	2	3	4	5
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 3.

1	2	3	4	5
---	---	---	---	---

4.

1	2	3	4	5
---	---	---	---	---

 5.

1	2	3	4	5
---	---	---	---	---

 6.

1	2	3	4	5
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7.

1	2	3	4	5
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 8.

1	2	3	4	5
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 9.

1	2	3	4	5
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10.

1	2	3	4	5
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 11.

1	2	3	4	5
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 12.

1	2	3	4	5
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13.

1	2	3	4	5
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 14.

1	2	3	4	5
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 15.

1	2	3	4	5
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16.

1	2	3	4	5
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 17.

1	2	3	4	5
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 18.

1	2	3	4	5
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19.

1	2	3	4	5
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 20.

1	2	3	4	5
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Unattempted Questions

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 Correct Answers

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 Wrong Answers

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 Marks

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PART – B

1. (a) . Draw dot –and cross diagrams of the following molecules
 පහත අණුවල ඊන් කහිර සටහන ඇඳ පෙන්වන්න.

- (i) CCl_4 (ii) N_2H_4 (iii) H_2S

(b) Arrange the following elements in the order of increasing metallic character.
 Mg, Si, P, Cl, and Na

පහත මූලද්‍රව්‍ය ලෝහිත ගුණ වැඩිවන ආකාරයට සකසන්න. Mg, Si, P, Cl, සහ Na

(c) Assign the following first ionization energies and ionic radii correspond to Al, Mg and Na in the table given below.

පහත වගුවෙහි Al, Mg සහ Na යන මූලද්‍රව්‍යවලට අදාළ පළමන අයනීකරණ ශක්තීන් හා අයනීක අරයන් ලියා දැක්වන්න.

First ionization energy පළමන අයනීකරණ ශක්තිය (kJ mol^{-1}) 496, 577, 737
 Ionic radii අයනීක අරය (Å^0) 1.02, 0.535, 0.72

Element මූලද්‍රව්‍ය			
First ionization energy පළමන අයනීකරණ ශක්තිය (kJ mol^{-1})			
Ionic radii අයනීක අරය (Å^0)			

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Ques. No	Max	Marks
MCQ	60	
01		
02		
Total	100	

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Name :-

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 PART A carries 20 multiple choice questions. PART B carries two structured type questions.

ANSWER ALL QUESTIONS

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Each item is a statement or question that may be answered by one of the five responses given. There is only **one best** answer to every question. Mark a cross (X) over the most suitable answer. For each correct response, **03** marks will be awarded. For each incorrect response, **0.5** marks will be deducted.

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|-----|---|---|---|---|---|---|-----|---|---|---|---|---|---|-----|---|---|---|---|---|---|
| 1. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 2. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 3. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 4. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 5. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 6. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
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| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
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| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 13. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 14. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 15. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 16. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 17. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 18. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 19. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | 20. | <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | |

Unattempted Questions	<table border="1"><tr><td></td></tr></table>		Correct Answers	<table border="1"><tr><td></td></tr></table>		Wrong Answers	<table border="1"><tr><td></td></tr></table>		Marks	<table border="1"><tr><td></td></tr></table>	

PART – B

1. (a) . Draw dot –and cross diagrams of the following molecules
பின்வரும் மூலக்கூறுகளின் புள்ளி - புள்ளி வடிவினை வரைக.
(i) CCl_4 (ii) N_2H_4 (iii) H_2S

- (b) Arrange the following elements in the order of increasing metallic character.
Mg, Si, P, Cl, and Na
பின்வரும் மூலக்கூறுகளை உலோகவியல்பு அதிகரிக்கும் ஒழுங்கிற்கேற்ப வரிசைப்படுத்துக. Mg, Si, P, Cl, மற்றும் Na

- (c) Assign the following first ionization energies and ionic radii correspond to Al, Mg and Na in the table given below.
கீழே தரப்பட்ட அட்டவணையில் Al, Mg மற்றும் Na இன் முதலாம் அயனாக்கற் சக்தி மற்றும் அயனாரைகளைக் குறிப்பிடுக.

First ionization energy முதலாம் அயனாக்கற் சக்தி (kJ mol^{-1}) 496, 577, 737
Ionic radii அயனாரை (Å^0) 1.02, 0.535, 0.72

Element மூலகம்			
First ionization energy முதலாம் அயனாக்கற் சக்தி (kJ mol^{-1})			
Ionic radii அயனாரை (Å^0)			

2. (a). Write down the equation for the reaction between Ca(OH)_2 and CO_2 , and what would your observation, when excess CO_2 is bubbled through this solution and what is your inference ?

Ca(OH)_2 மற்றும் CO_2 இங்கிடையிலான தாக்கத்திற்கான இரசாயன சமன்பாட்டை எழுதுக. மேலும், மிகை CO_2 ஆனது கரைசலினூடாக குமிழ்த்தப்படும் போது உம்முடைய அவதானம் யாது?

- (b) Write down the number of protons and electrons are in the following ions/atoms?
பின்வரும் அயன்கள் / அணுக்களிலுள்ள புரோத்தன் மற்றும் இலத்திரன்களின் எண்ணிக்கையை எழுதுக.

(i) S^{2-}

(ii) Mg^{2+}

(iii) F^-

(iv) C

- (c) Write down the two properties of ionic solids

அயன் பிணைப்புக்களைக் கொண்ட திண்மங்களின் இரு இயல்புகளைத் தருக.

- (d) Explain why ethyl alcohol ($\text{C}_2\text{H}_5\text{OH} = 78.4^\circ\text{C}$) has a higher boiling point than methyl alcohol ($\text{CH}_3\text{OH} = 64.7^\circ\text{C}$)

எதில் அற்ககோல் ($\text{C}_2\text{H}_5\text{OH} = 78.4^\circ\text{C}$) ஆனது, மெதில் அற்ககோலைவிட கொதிநிலை கூடியது. ($\text{CH}_3\text{OH} = 64.7^\circ\text{C}$) இதற்கான விளக்கத்தைத் தருக.

