Draw the M.O. Diagram for and Discuss its bond order and magnetic behaviour.

OR

ây÷àm §ý ¡àoàÊ qÊ ¥w §ý ¡à§ýàÊ ¥w roS§ýà½à §ýL ytlà¢¥ ñ

Explain the shape and bond angles in and according to theory.

ZàÎÀà-3. rà£À-ÑrÊ j§ý §ýà yàà»ut ¨vàÊà¢»ý §ýà £ÀàÑÊ½à v§ýÊ ytlà¢¥ ñ

Explain the Born-Haber Cycle considering sodium chloride as an example.

OR

oà0¼w§ý ro ¨uà Ñ? ¢y§ý r½»ý ây÷àm §ýà ytlà¢¥ ñ

What is Metallic bond? Explain its band theory.

ZàÎÀà-4. ¥w §ýL yÊjÂàà §ýà ytlà¢¥ ñ

Explain the structure of and .

OR

¥w m¼wà §ý kâw§ý mØà t §ýàu §ýL âwwjÂàà §ýLâk¥ ñ

Discuss the function of and elements in bio-system.

ZàÎÀà-5. »à¢rà£Âà §ýL "Ñà¢»àkÂà ym yÊjÂàà" §ýL Íuà©uà §ýLâk¥ ñ

Explain the "Hydrogen bridge structure" of Diborne.

OR

â¹ÄÀq½àã âvâh¥ (Write notes on)ß

¡) §ýàâtv ¨vàÊà¢»ý qÊãÕà½à (Chromyl Chloride Test)

r) §ýL yÊjÂàà (Structure of)

----x----

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Annual Examination - 2017

B.Sc.-I

CHEMISTRY

Paper - I

INORGANIC CHEMISTRY

Max.Marks : 33

Time : 3 Hrs. Min Marks : 11

¹ãq ß h½»ý '¡' t ¡à° ¡âmvi ÙàÊã ZàÎÀà Ñ, âkÂÑ Ñv §ýÊÂàà ¡âÂàwàu Ñ ñ h½»ý 'r' t vi ÙàÊã ZàÎÀà h½»ý 'y' t Àãi £ÙàÊãu ZàÎÀà Ñ ñ h½»ý '¡' §ýà yry qÑv Ñv §ýÊ ñ

Note : Section 'A', containing 8 very short answer type questions, is compulsory. Section 'B' consists of short answer type questions and Section 'C' consists of long answer type questions. Section 'A' has to be solved first.

h½»ý-'¡'(Section-'A')

âÂàÈÂàà§ým ¡âm vi £ÙàÊãu ZàÎÀàà §ýý £ÙàÊ ¥§ý uà Àà wà¨uà t À ñ (Answer the following very short-answer-type questions in one or two sentences) (1x8=8)

ZàÎÀà-1. *d* - §ýÕà§ýà §ýL y©uà ¥w Àààt âvâh¥ ñ

Write the number and name of - orbitals.

ZàÎÀà-2. ¥w t §ýàÂà-yà y§ýÊ½à Ñ ?

What are the hybridisation of and

ZàÎÀà-3. ây÷àm §ý ZàÐmàw§ý §ýàÂà Ñ?

Who proposed the theory?

ZàÎÀà-4. âkÂààÂà §ý Àà ¡à¨yã ¨vàÊà¢»à §ý Àààt ¥w yØà âvâh¥ ñ

Write the name and formula of Xenon oxyfluorides.

ZàÎÀà-5. Äýv£ãÂà t ÂuÂàmt §ýàrÂà-qÊtà½à ¡à §ýL y©uà ¨uà Ñ?

What is the minimum number of carbon atoms in fullerene.

ZàÎÀà-6. ¡§ýàrâÂà§ý rÂkãÂà §ýà Àààt ¥w yØà âvâh¥ ñ

Write the name and formula of Inorganic benzene.

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ZàÎÂà-7. Àà ¡sàyã (²¦À¦t) ÑvàkÂàà§ý Âààt ¥w yØà âvâh¥ ñ

Write the name and formula of pseudo halogens.

ZàÎÂà-8. Âàà¢¹¦¹¦ §ý wvu qÊãÕà½à t¦ rÂàÂà wàv¦ wvu §ýà ÊàyàuâÂà§ý Âààt ¥w yØà âvâh¥ ñ

Write the chemical name and formula of ring formed in 'Ring Test of Nitrate'.

h½»¦-'r' (Section-'B')

âÂàÈÂàà¦â§ým vi¦ £ÙàÊãu ZàÎÂàà¦ §ý £ÙàÊ 75-100 ÎàÈÀ-yãtà t¦ À¦ ñ
(Answer the following short-answer type questions with word limit 75-100) **(2x5=10)**

ZàÎÂà-1. mÊªà ªà½à ¨uà Ñ? »¦ã-rªvã ytã§ýÊ½à Íu¦qÂÂà §ýLâk¥ ñ

What is wave characteristics? Derive the de-Brogile equation.

OR

¡àuÂàÂà âwsw ¨uà Ñ? Âàà¢¹¦àkÂà §ýà ¡àuÂàÂà âwsw ¡à¨ykÂà y¦ ¡âo§ý ¨uà¦ Ñà¦mà Ñ?

What is ionisation potential? Why ionisation potential of nitrogen is greater than oxygen?

ZàÎÂà-2. y§ýÊ½à ¨uà Ñ? §ý y§ýÊ½à §ýL âww¦jÂàà §ýLâk¥ ñ

What is hybridisation ? Discuss the hybridisation of .

OR

ro ¤ýkà ¥w ro âwuàkÂà ¤ýkà ¨uà Ñ? ¢y§ýà ZàsàâwM §ýÊÂà wàv¦ Àà §ýàÊ§ýà §ýà w½àÂà §ýLâk¥ ñ

What are the bond energy and bond dissociation energy? Describe the two factors on which it depends.

ZàÎÂà-3. o¦w½à ÎàâQý ¥w o¦w½àmà ¨uà Ñ? ÄýkàÂà §ý âÂàut §ýà ytlà¢¥ ñ

What are polarizing power and polarizibility? Explain the FAJAN's rule.

OR

âwvàu§ýÂà £kà ¨uà Ñ? uÑ âwvumà §ýà §ýy¦ ZàsàâwM §ýÊmà Ñ ?

What is sovation energy? How does it affect solubility?

ZàÎÂà-4. ¨vnÊ¹¦ uàâªà§ý §ýà £ÀàÑÊ½à yâÑm ytlà¢¥ ñ

Explain the clathrate compound with example.

OR

âw§ý½à-ytàÂàmà ¨uà Ñ? §ýL jàÊ âw§ý½à-ytàÂàmà âvâh¥ ñ

What is diagonal similarties? Write the four diagonal similarities in .

ZàÎÂà-5. ¡¦mÊ ÑvàkÂà uàâªà§ý ¨uà Ñ? Âààt âvâh¥ mnà §ýL yÊjÂàà §ýL Íuà©uà §ýLâk¥ ñ

What are Interhalogens compound? Write name and explain the structure of .

OR

¡à¨kv¹¦ ¥w ràÊ¹¦ §ýà qÊãÕà½à mnà âÂàÏ§ýàyÂà âvâh¥ ñ

Write the test and removal of oxalate and borate.

h½»¦-'y' (Section-'C')

âÂàÈÂàà¦â§ým Àãl¦ £ÙàÊãu ZàÎÂàà¦ §ý £ÙàÊ 300-350 ÎàÈÀ-yãtà t¦ À¦ ñ
(Answer the following long-answer type questions with word limit 300-350) **(3x5=15)**

ZàÎÂà-1. ¢v¨¹¦àÂà romà ¨uà Ñ? âõmãu ¢v¨¹¦àÂà romà yÀw £ÏtàÎààxã ¨uà¦ Ñ? ¢y§ýà ZàsàâwM §ýÊÂà wàv¦ §ýàÊ§ýà §ýL âww¦jÂàà §ýLâk¥ ñ

What is electron affinity? Why second electron affinity is always endothermic? Discuss the factors affecting it.

OR

âÂàut §ýL Íuà©uà §ýLâk¥ ñ ¥w §ýà ¢v¨¹¦àÂà§ý âwÂuày âvâh¥ ñ

Explain the rule. Write the electronic configuration of and .

ZàÎÂà-2. §ýà ¡à0½w§ý §ýÕà§ý ¡àÊh rÂàà¢¥ mnà ¢y§ý ro §ýt ¥w j¦r§ýLu ÍuwÑàÊ §ýL âww¦jÂàà §ýLâk¥ ñ