

APOLLO

# Chemical Bonding

## FBISE Chemistry Class 9 (SSC-I)

Domain B: Physical Chemistry

32 questions | questions

Original FBISE question crops. National Curriculum 2022-23 topic.

|     |                                                              |                          |         |         |         |         |
|-----|--------------------------------------------------------------|--------------------------|---------|---------|---------|---------|
| 14. | Which two elements react together to form an ionic compound? |                          | W and X | X and Y | Y and Z | Z and W |
|     | element                                                      | Electronic configuration |         |         |         |         |
|     | W                                                            | 2,4                      |         |         |         |         |
|     | X                                                            | 2,8                      |         |         |         |         |
|     | Y                                                            | 2,8,1                    |         |         |         |         |
|     | Z                                                            | 2,8,7                    |         |         |         |         |

|     |                                                      |                              |                                       |                                |                                   |
|-----|------------------------------------------------------|------------------------------|---------------------------------------|--------------------------------|-----------------------------------|
| 17. | Why does molten sodium chloride conduct electricity? | It has free mobile electrons | The ions move freely when bonds break | Heating makes electrons mobile | Sodium becomes a conductive metal |
|-----|------------------------------------------------------|------------------------------|---------------------------------------|--------------------------------|-----------------------------------|

|     |    |                                                                                                                                              |     |
|-----|----|----------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 2x3 | OR | Draw electron dot and cross structures for the following:<br>درج شدہ کے الیکٹران ڈاٹ اور کراس سٹرکچر بنائیں۔<br>a) $NH_3$ b) $N_2$ c) $CH_4$ | 2x3 |
|-----|----|----------------------------------------------------------------------------------------------------------------------------------------------|-----|

|     |    |                                                                                                                                              |
|-----|----|----------------------------------------------------------------------------------------------------------------------------------------------|
| 3+3 | OR | Draw electron dot and cross structures for the following:<br>درج شدہ کے الیکٹران ڈاٹ اور کراس سٹرکچر بنائیں۔<br>a) $HCN$ b) $Cl_2$ c) $CO_2$ |
|-----|----|----------------------------------------------------------------------------------------------------------------------------------------------|

|    |                                                                                  |            |               |               |               |
|----|----------------------------------------------------------------------------------|------------|---------------|---------------|---------------|
| 3. | What type of bond is formed when two atoms share one or more pairs of electrons? | Ionic bond | Covalent bond | Metallic bond | Hydrogen bond |
|----|----------------------------------------------------------------------------------|------------|---------------|---------------|---------------|

|                                                                                                                                                                                                                                                                               |  |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|
| Draw dot and cross diagrams to show the formation of the following compounds. Also identify the type of bonding:<br>(i) Sodium fluoride (NaF)<br>(ii) Water molecule ( $H_2O$ )<br>درج شدہ مرکبات کی فارمیٹن کو ظاہر کرنے کے لیے ڈاٹ اور کراس ڈایاگرام بنائیں۔ نیز ہر ایک میں |  | 3+3 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|

|           |    |                                                                                                                                   |                 |
|-----------|----|-----------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1+1<br>+1 | OR | Show the following conversions by drawing their electrons dot structures:<br>a. $Na \rightarrow Na^+$<br>b. $Cl \rightarrow Cl^-$ | 1.5<br>+<br>1.5 |
|-----------|----|-----------------------------------------------------------------------------------------------------------------------------------|-----------------|



|      |                                   |    |
|------|-----------------------------------|----|
| (xi) | State 'duplet' and 'octet' rules. | 03 |
|------|-----------------------------------|----|

|     |                                                                     |    |
|-----|---------------------------------------------------------------------|----|
| Q.5 | Analyze the bond formation between magnesium (Mg) and fluorine (F). | 04 |
|-----|---------------------------------------------------------------------|----|

|     |                                                             |     |
|-----|-------------------------------------------------------------|-----|
| Q.6 | Describe the formation of double and triple covalent bonds. | 2+2 |
|-----|-------------------------------------------------------------|-----|

|    |                                          |                  |             |                |             |
|----|------------------------------------------|------------------|-------------|----------------|-------------|
| 2. | Which of the following have ionic bonds? | $H - C \equiv N$ | $O = C = O$ | $Cl - Mg - Cl$ | $H - O - H$ |
|----|------------------------------------------|------------------|-------------|----------------|-------------|

|  |                                                                                                   |    |
|--|---------------------------------------------------------------------------------------------------|----|
|  | Classify the following compounds as covalent or ionic:<br>$CO_2, NaCl, H_2O, C_2H_4, CaCl_2, HCl$ | 03 |
|--|---------------------------------------------------------------------------------------------------|----|

|      |                                                               |    |
|------|---------------------------------------------------------------|----|
| (ix) | Draw electron cross and dot structures for $H_2O_2$ Molecule. | 03 |
|------|---------------------------------------------------------------|----|

|                                                              |                |    |    |                            |
|--------------------------------------------------------------|----------------|----|----|----------------------------|
| Find the number of valence electrons in the following atoms: |                | 03 | OR | Which<br>which<br>اوجہ بھی |
| a.                                                           | Sulphur (S)    |    |    |                            |
| b.                                                           | Magnesium (Mg) |    |    |                            |
| c.                                                           | Chlorine (Cl)  |    |    |                            |

|        |                                                                       |     |
|--------|-----------------------------------------------------------------------|-----|
| (viii) | What is covalent bond? Discuss the formation of triple covalent bond. | 1+2 |
|--------|-----------------------------------------------------------------------|-----|

|    |                                                                                       |    |
|----|---------------------------------------------------------------------------------------|----|
| OR | Discuss and show the formation of ionic bond between magnesium (Mg) and fluorine (F). | 04 |
|----|---------------------------------------------------------------------------------------|----|

Show the formation of NaF and NaBr using electron dot-and-cross structures. Identify the positive and negative ions in those.

|                             | Transfer of electrons | Transfer of protons | Sharing of electrons | Sharing of neutrons |
|-----------------------------|-----------------------|---------------------|----------------------|---------------------|
| covalent bond is formed by: |                       |                     |                      |                     |

|                                                  |      |                   |      |       |
|--------------------------------------------------|------|-------------------|------|-------|
| 5. Chlorine reacts with sodium to form:          | NaCl | Na <sub>2</sub> O | NaOH | NaClO |
| کلورین سوڈیم کے ساتھ ری ایکشن کر کے کیا بنتی ہے؟ |      |                   |      |       |

|       |                                                                                   |     |    |                                                                                                |                 |
|-------|-----------------------------------------------------------------------------------|-----|----|------------------------------------------------------------------------------------------------|-----------------|
| (iii) | How is a covalent bond formed? Describe using the example of a hydrogen molecule. | 2+1 | OR | Differentiate between an empirical formula and a molecular formula. Give one example for each. | 1.5<br>+<br>1.5 |
|       | کونسا کووولنٹ بندہ کیسے بنتا ہے؟ ہائیڈروجن کے ذریعہ مثال دیں۔                     |     |    | ایمپیریکل فارمولہ اور مالیکیولر فارمولہ میں فرق کیا ہے؟ ہر ایک کا ایک مثال دیں۔                |                 |

|      |                                                                                                   |    |    |                                                                                                                |     |
|------|---------------------------------------------------------------------------------------------------|----|----|----------------------------------------------------------------------------------------------------------------|-----|
| (vi) | State the importance of noble gas electronic configuration in formation of ion. Give one example. | 03 | OR | Draw the electron cross and dot structure of CO <sub>2</sub> . How many shared electron pairs are there in it? | 2+1 |
|      | نوبل گیس الیکٹرونک کنفیگریشن میں یون کی تشکیل میں اہمیت بیان کریں۔ ایک مثال دیں۔                  |    |    | CO <sub>2</sub> کا الیکٹرون کراس اور ڈاٹ ڈیٹریکٹر بنائیں۔ اس میں کتنے اشتراکی الیکٹرون جوڑے ہیں؟               |     |

|    |                                                                                                                                                                                                                    |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OR | Draw the electron cross and dot structure of CO <sub>2</sub> . How many shared electron pairs are there in it?<br>CO <sub>2</sub> کا الیکٹرون کراس اور ڈاٹ ڈیٹریکٹر بنائیں۔ اس میں کتنے اشتراکی الیکٹرون جوڑے ہیں؟ |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|        |                                                              |                 |
|--------|--------------------------------------------------------------|-----------------|
| (viii) | State the octet and duplet rules. Write one example of each. | 1.5<br>+<br>1.5 |
|--------|--------------------------------------------------------------|-----------------|