

STD: XI

ONE MARK TEST – 5
CHEMISTRY

Lesson: 4 & 12

Marks: 30/ Time: 45min.

Choose the correct answer.

- Ionic hydrides are formed by
 - halogens
 - chalcogens
 - inert gases
 - group one elements
- The magnetic moment of para-hydrogen is _____.
 - one
 - zero
 - twice
 - maximum
- Assertion:** Permanent hardness of water is removed by treatment with washing soda.
Reason: Washing soda reacts with soluble calcium and magnesium chlorides and sulphates in hard water to form insoluble carbonates
 - Both assertion and reason are true and reason is the correct explanation of assertion
 - Both assertion and reason are true but reason is not the correct explanation of assertion
 - Assertion is true but reason is false
 - Both assertion and reason are false
- Which of the following statement is correct about ortho-para hydrogen?
 - The magnetic moment of para-hydrogen is twice that of a proton
 - Ortho form is more stable than para form
 - Ortho form can be catalytically converted into the para form using platinum
 - At room temperature, normal hydrogen consists of 75% para form.
- For decolourisation of 1 mole of acidified KMnO_4 , the moles of H_2O_2 required is
 - $\frac{1}{2}$
 - $\frac{3}{2}$
 - $\frac{5}{2}$
 - $\frac{7}{2}$
- Which one of the following is used to study the movements of groundwater?
 - Deuterium
 - Protium
 - Tritium
 - HD
- Which of the following statements about hydrogen is incorrect?
 - Hydrogen ion, H_3O^+ exists freely in solution
 - Dihydrogen acts as a reducing agent
 - Hydrogen has three isotopes of which tritium is the most common
 - Hydrogen never acts as cation in ionic salts
- Heavy water is used as
 - moderator in nuclear reactions
 - coolant in nuclear reactions
 - both (a) and (b)
 - none of these
- At room temperature normal hydrogen consists of _____.
 - 25% ortho form + 75% para form
 - 50% ortho form + 50% para form
 - 75% ortho form + 25% para form
 - 60% ortho form + 40% para form
- The hardness of water can be determined by volumetrically using the reagent
 - sodium thio sulphate
 - potassium permanganate
 - hydrogen peroxide
 - EDTA
- The correct order of melting point of isotopes of hydrogen is
 - $\text{H} < \text{D} < \text{T}$
 - $\text{T} < \text{D} < \text{H}$
 - $\text{H} < \text{T} < \text{D}$
 - $\text{D} < \text{H} < \text{T}$
- Which of the following is produced by the bombardment of neutrons with lithium?
 - Deuterium
 - Protium
 - Tritium
 - Beryllium
- In solid ice, oxygen atom is surrounded
 - tetrahedrally by 4 hydrogen atoms
 - octahedrally by 2 oxygen and 4 hydrogen atoms
 - tetrahedrally by 2 hydrogen and 2 oxygen atoms
 - octahedrally by 6 hydrogen atoms
- Tritium nucleus contains
 - $1p + 0n$
 - $2p + 1n$
 - $1p + 2n$
 - none of these
- The half-life period of tritium is _____.
 - 123.3 year
 - 12.33 years
 - 1 year
 - 1600 years

16) d. $\text{C}_6\text{H}_5\text{NH}_2$ 17) d. BF_3

16. Which of the following species does not exert a resonance effect?
- a) C_6H_5OH b) C_6H_5Cl c) $C_6H_5NH_2$ d) $C_6H_5\overset{+}{N}H_3$
17. Which of the following species does not act as a nucleophile?
- a) ROH b) ROR c) PCl_3 d) BF_3
18. Which of the following species is paramagnetic?
- a) A carbanion b) A free radical c) A carbocation d) All of these
19. Which of the following carbocation will be most stable?
- a) Ph_3C^+ b) $CH_3-\overset{+}{C}H_2-$ c) $(CH_3)_2-\overset{+}{C}H$ d) $CH_2=CH-\overset{+}{C}H_2$
20. Which one of the following is an example for free radical initiators?
- a) Benzoyl peroxide b) Benzyl alcohol c) Benzyl acetate d) Benzaldehyde.
21. During electrolysis of water containing traces of acid, hydrogen is liberated at
- a) cathode b) anode c) both anode and cathode d) none of the above
22. For the following reactions
- (A) $CH_3CH_2CH_2Br + KOH \rightarrow CH_3-CH=CH_2 + KBr + H_2O$
- (B) $(CH_3)_3CBr + KOH \rightarrow (CH_3)_3COH + KBr$
- (C)
-
- Which of the following statement is correct?
- a) (A) is elimination, (B) and (C) are substitution
- b) (A) is substitution, (B) and (C) are elimination
- c) (A) and (B) are elimination and (C) is addition reaction
- d) (A) is elimination, (B) is substitution and (C) is addition reaction.
23. Autoxidation of 2-alkyl anthraquinol gives
- a) Hydrogen peroxide b) Heavy water c) Hydrogen d) Water
24. Which of the following species is not electrophilic in nature?
- a) Cl^+ b) BH_3 c) H_3O^+ d) $^+NO_2$
25. Heterolytic fission of C-C bond results in the formation of
- a) free radical b) Carbanion c) Carbocation d) Carbanion and Carbocation
26. Which of the following is correct order of the stability of carbocations?
- a) $^+CH_3 > ^+CH_2CH_3 > ^+CH(CH_3)_2 > ^+C(CH_3)_3$ b) $^+CH_2CH_3 > ^+CH_3 > ^+CH(CH_3)_2 > ^+C(CH_3)_3$
- c) $^+C(CH_3)_3 > ^+CH(CH_3)_2 > ^+CH_2CH_3 > ^+CH_3$ d) $^+CH(CH_3)_2 > ^+CH_3 > ^+CH_2CH_3 > ^+C(CH_3)_3$
27. The percentage of heavy water in normal water is
- a) 1.6×10^4 b) 1.6×10^{-4} c) 1.6×10^{-3} d) 1.6×10^2
28. Hyper Conjugation is also known as
- a) no bond resonance b) Baker – Nathan effect c) both (a) and (b) d) none of these
29. Methyl carbanion is
- a) Electrophile b) Lewis acid c) Both (a) and (b) d) Nucleophile
30. What is the hybridisation state of benzyl carbonium ion?
- a) sp^2 b) sp^d^2 c) sp^3 d) sp^2d

1 mark Test - 5Lesson: 4 & 12Answer Key

No

- | | |
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| 1) d. Group one element | 18) b. A free radical |
| 2) b. zero | 19) a) Benzoyl Peroxide Ph_2O_2 |
| 3) a. Both assertion and reason are true and reason is the correct explanation of assertion. | 20) a. Benzoyl Peroxide |
| 4) b. Ortho form is more stable than Para form | 21) a. Cathode |
| 5) c. F_2 | 22) d. A is elimination, B is substitution and C is addition reaction. |
| 6) a. Deuterium | 23) a. Hydrogen Peroxide |
| 7) c. Hydrogen has three isotopes of which tritium is the most common | 24) c. H_3O^+ |
| 8) c. both (a) and (b) | 25) d. Carbanion and carbocation |
| a) c. 75% ortho form + 25% Para form | 26) c. $^+\text{C}(\text{CH}_3)_3 + ^-\text{CH}(\text{CH}_3)_2 \rightleftharpoons \text{CH}_3-\text{C}^+\text{H}(\text{CH}_3)-\text{CH}_2^--\text{CH}_3$ |
| b) d. EDTA | 27) b. 1.6×10^{-4} |
| 11) a. $\text{H} < \text{D} < \text{T}$ | 28) c. both (a) and (b) |
| 12) c. Tritium | 29) d. Nucleophile |
| 13) a. tetrahedrally by 4 hydrogen atom | 30) a. sp^2 |
| 14) c. 1 Pt 2n | |
| 15) b. 12-33 years | |
| 16) d. $\text{C}_6\text{H}_5\text{N}^+\text{H}_3$ | |
| 17) d. BF_3 | |

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STD: XI

ONE MARK TEST – 6
CHEMISTRY

Lesson: 5 & 9

Marks: 30 / Time: 45 Min.

Choose the correct answer.

1. Assertion: BeSO_4 is soluble in water while BaSO_4 is not**Reason:** Hydration energy decreases down the group from Be to Ba and lattice energy remains almost constant.

- both assertion and reason are true and reason is the correct explanation of assertion
 - both assertion and reason are true but reason is not the correct explanation of assertion
 - assertion is true but reason is false
 - both assertion and reason are false
2. Which of the following is radioactive in group one elements?
- Lithium
 - Caesium
 - Rubidium
 - Francium
3. For alkali metals, which one of the following trends is incorrect?
- Hydration energy: $\text{Li} > \text{Na} > \text{K} > \text{Rb}$
 - Ionization energy: $\text{Li} > \text{Na} > \text{K} > \text{Rb}$
 - Density: $\text{Li} < \text{Na} < \text{K} < \text{Rb}$
 - Atomic size: $\text{Li} < \text{Na} < \text{K} < \text{Rb}$
4. Which one of the following gives red colour in flame test?
- Lithium
 - Sodium
 - Potassium
 - Francium
5. In which process, fused sodium hydroxide is electrolysed for extraction of sodium?
- Castner's process
 - cyanide process
 - Down process
 - All of these
6. A colourless solid substance (A) on heating evolved CO_2 and also gave a white residue, soluble in water. Residue also gave CO_2 when treated with dilute HCl.
- Na_2CO_3
 - NaHCO_3
 - CaCO_3
 - $\text{Ca}(\text{HCO}_3)_2$
7. Which metal is used as radiation windows for X-ray tubes?
- Magnesium
 - Sodium
 - Calcium
 - Beryllium
8. Arrange the following in increasing order of hydration enthalpy.
- $\text{Rb}^+ > \text{Li}^+ > \text{Na}^+ > \text{K}^+ > \text{Cs}^+$
 - $\text{Cs}^+ > \text{Rb}^+ > \text{K}^+ > \text{Na}^+ > \text{Li}^+$
 - $\text{Li}^+ > \text{Na}^+ > \text{K}^+ > \text{Rb}^+ > \text{Cs}^+$
 - $\text{K}^+ > \text{Na}^+ > \text{Li}^+ > \text{Rb}^+ > \text{Cs}^+$
9. Which of the following has the highest tendency to give the reaction $\text{M}^+(\text{g}) \xrightarrow[\text{Medium}]{\text{Aqueous}} \text{M}^+(\text{aq})$
- Na
 - Li
 - Rb
 - K
10. Which of the following reaction produces hydrogen?
- $\text{Mg} + \text{H}_2\text{O}$
 - $\text{H}_2\text{S}_4\text{O}_8 + \text{H}_2\text{O}$
 - $\text{BaO}_2 + \text{HCl}$
 - $\text{Na}_2\text{O}_2 + 2\text{HCl}$
11. Spodumene and lepidolite are the minerals of _____.
- lithium
 - sodium
 - potassium
 - rubidium
12. In context with beryllium, which one of the following statements is incorrect?
- It is rendered passive by nitric acid
 - It forms Be_2C
 - Its salts are rarely hydrolysed
 - Its hydride is electron deficient and polymeric
13. The name 'Blue John' is given to which of the following compounds?
- CaH_2
 - CaF_2
 - $\text{Ca}_3(\text{PO}_4)_2$
 - CaO

14. Which is the function of the sodium-potassium pump?
 a) Maintenance of ion balance
 b) Used in nerve impulse conduction
 c) Transmitting nerve signals
 d) Regulates the blood level
15. Find the wrong statement
 a) sodium metal is used in organic qualitative analysis
 b) sodium carbonate is soluble in water and it is used in inorganic qualitative analysis
 c) potassium carbonate can be prepared by Solvay process
 d) potassium bicarbonate is acidic salt
16. Phenol dimerises in benzene having van't Hoff factor 0.54. What is the degree of association?
 a) 0.46
 b) 92
 c) 46
 d) 0.92
17. In which mode of expression of concentration of a solution remains independent of temperature?
 a) Molarity
 b) Normality
 c) Formality
 d) Molality
18. The partial pressure of nitrogen in air is 0.76atm and its Henry's law constant is 7.6×10^4 atm at 300K. What is the mole fraction of nitrogen gas in the solution obtained when air is bubbled through water at 300K?
 a) 1×10^{-4}
 b) 1×10^{-6}
 c) 2×10^{-5}
 d) 1×10^{-5}
19. For A and B to form an ideal solution which of the following conditions should be satisfied ?
 a) $\Delta H_{\text{mixing}} = 0$
 b) $\Delta V_{\text{mixing}} = 0$
 c) $\Delta S_{\text{mixing}} = 0$
 d) All three conditions mentioned above
20. Which of the following is correct for a solution showing positive deviations from Raoult's law?
 a) $\Delta V = +ve$, $\Delta H = +ve$
 b) $\Delta V = -ve$, $\Delta H = -ve$
 c) $\Delta V = +ve$, $\Delta H = -ve$
 d) $\Delta V = -ve$, $\Delta H = +ve$
21. The K_H for the solution of oxygen dissolved in water is 4×10^4 atm at a given temperature. If the partial pressure of oxygen in air is 0.4 atm, the mole fraction of oxygen in solution is
 a) 4.6×10^3
 b) 1.6×10^4
 c) 1×10^{-5}
 d) 1×10^5
22. What is the molality of a 10% W/W aqueous sodium hydroxide solution?
 a) 2.778
 b) 2.5
 c) 10
 d) 0.4
23. Lithium reacts directly with carbon to form
 a) Li_2C_2
 b) Li_2C
 c) LiC_2
 d) LiC
24. The molality of a solution containing 1.8g of glucose dissolved in 250g of water is
 a) 0.2 M
 b) 0.01 M
 c) 0.02 M
 d) 0.04 M
25. Sodium reacts with acetylene to give
 a) Sodium ethoxide
 b) Sodium acetylide
 c) Sodium hydroxide
 d) Sodamide
26. Which liquid pair shows a positive deviation from Raoult's law ?
 a) Acetone – chloroform
 b) Benzene – methanol
 c) Water – nitric acid
 d) Water – hydrochloric acid
27. Osmotic pressure (π) of a solution is given by the relation
 a) $\pi = nRT$
 b) $\pi V = nRT$
 c) $\pi RT = n$
 d) none of these
28. Normality of 2 M sulphuric acid is
 a) 2 N
 b) 4 N
 c) N/2
 d) N/4
29. The relative lowering of vapour pressure of a sugar solution in water is 3.5×10^{-3} . The mole fraction of water in that solution is
 a) 0.0035
 b) 0.35
 c) 0.0035/18
 d) 0.9965
30. The correct equation for the degree of an associating solute, 'n' molecules of which undergoes association in solution, is
 a) $\alpha = \frac{n(i-1)}{n-1}$
 b) $\alpha^2 = \frac{n(1-i)}{(n-1)}$
 c) $\alpha = \frac{n(i-1)}{1-n}$
 d) $\alpha = \frac{n(1-i)}{n(1-i)}$

Onemark Test - 6

Lesson: 5 & 9.

1. both assertion and reason are true.

2. d) Francium

3. c) Density: $Li < Na < K < Rb$

4. a) Lithium

5. a). Castner's Process

6. b) $NaHCO_3$

7. d). Beryllium

8. c) $Li^+ > Na^+ > K^+ Rb^+ > Cs^+$

9. b) Li

10. a) $Mg + H_2O$

11. a) Lithium

12. c) Its salts are rarely hydrolysed

13. b) CaF_2

14. c) Transmitting nerve signals

15. c). Potassium carbonate can be prepared by Solvay Process.

16. d) 0.92

17. d) Molality

18. d) 1×10^{-5}

19. d) All the three conditions mentioned above.

20. a) $\Delta V = +ve$, $\Delta H = +ve$

21. c). 1×10^{-5}

22. b) 2-5

23. a) Li_2C_2

24. d) 0.04M

25. b) Sodium acetylide

26. b). Benzene-methanol

27. b) $\pi V = nRT$

28. b) 4N

29. d) 0.9965

30. c)

$$d = \frac{n(l-1)}{1-n}$$

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STD: XI

ONE MARK TEST – 9

Lesson: 14

Marks: 30 / Time: 45 Min.

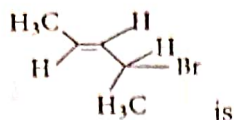
CHEMISTRY

Choose the correct answer.

1. Which of the following is an example of polyhalo compounds?

- a) Vinyl iodide b) Chlorobenzene c) Allyl chloride d) Chloroform

2. The IUPAC name of



is

- a) 2-Bromo pent – 3 – ene b) 4-Bromo pent – 2 – ene
c) 2-Bromo pent – 4 – ene d) 4-Bromo pent – 1 – ene

3. IUPAC name of allyl chloride is

- a) 1 – chloro ethane b) 3 – chloro- 1 – propyne
c) 3 – chloro – 1 – propene d) 1 – chloro propane

4. Propane nitrile may be prepared by heating

- a) Propyl alcohol with KCN b) ethyl chloride with KCN
c) Propyl chloride with KCN d) ethyl chloride with KCN

5. Assertion : In mono haloarenes, electrophilic substitution occurs at ortho and para positions.

Reason : Halogen atom is a ring deactivator.

- a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false
d) If both assertion and reason are false.

6. Which of the following is called Lucas reagent?

- a) Conc. H₂SO₄ + Anhydrous CuSO₄ b) Conc.HCl + Anhydrous ZnCl₂
c) Dil.HCl + AlCl₃ d) Conc.HCl + ConcHNO₂

7. C-X bond is strongest in

- a) Chloromethane b) Iodomethane c) Bromomethane d) Fluoromethane

8. The raw material for Rasching process

- a) chloro benzene b) phenol c) benzene d) anisole

9. $R - Cl + NaI \xrightarrow{\text{Acetone}} R - I + NaCl$. This reaction is

- a) Wurtz reaction b) Fittig reaction c) Finkelstein reaction d) Huck reaction

10. Ethylidene chloride on treatment with aqueous KOH gives

- a) acetaldehyde b) ethyleneglycol c) formaldehyde d) glyoxal

11. The order of reactivity of various alkyl halides toward S_N1 reaction is

- a) 3° > 2° > 1° b) 1° > 2° > 3° c) 3° < 2° > 1° d) 1° > 3° > 2°

12. Consider the reaction, $CH_3CH_2CH_2Br + NaCN \rightarrow CH_3CH_2CH_2CN + NaBr$ This reaction will be the fastest in

- a) ethanol b) methanol
c) DMF (N, N' – dimethyl formamide) d) water

13. acetone $\xrightarrow{i) CH_3MgI}$ X, X is

- a) 2-propanol b) 2-methyl-2-propanol
c) 1 – propanol d) acetone

14. The correct order of increasing boiling points is

- a) 1 – chloropropane < isopropylchloride < 1 – chlorobutane
b) isopropylchloride < 1 – chloropropane < 1 – chlorobutane
c) 1 – chlorobutane < isopropylchloride < 1 – chloropropane
d) 1 – chlorobutane < 1 – chloropropane < isopropylchloride

15. Which of the following reagent is used to distinguish gem-dihalides and vicinal dihalides?
 a) Alcoholic KOH b) Aqueous KOH c) $\text{FeCl}_3/\text{Cl}_2$ d) Ethanol
16. The most easily hydrolysed molecule under S_N^1 condition is
 a) allyl chloride b) ethyl chloride c) isopropyl chloride d) benzyl chloride
17. The treatment of ethyl formate with excess of RMgX gives
 a) $\text{R}-\overset{\text{O}}{\underset{\text{O}}{\text{C}}}-\text{R}$ b) $\text{R}-\underset{\text{OH}}{\text{CH}}-\text{R}$ c) $\text{R}-\text{CHO}$ d) $\text{R}-\text{O}-\text{R}$
18. With respect to the position of $-\text{Cl}$ in the compound $\text{CH}_3-\text{CH}=\text{CH}-\text{CH}_2-\text{Cl}$, it is classified as
 a) Vinyl b) Allyl c) Secondary d) Aryl
19. Chlorobenzene on nitration gives major product of
 a) 1-chloro-4-nitro benzene b) 1-chloro-3-nitro benzene
 c) 1,4-dinitro benzene d) 2,4,6-tri nitro benzene
20. Classify the following compounds in the form of alkyl, allylic, vinyl, benzylic halides
 a) $\text{CH}_3-\text{CH}=\text{CH}-\text{Cl}$ b) $\text{C}_6\text{H}_5\text{CH}_2\text{I}$
 c) $\text{CH}_3-\underset{\text{Br}}{\text{CH}}-\text{CH}_3$ d) $\text{CH}_2=\text{CH}-\text{Cl}$
21. $\text{CH}_3\text{CH}=\text{CH}_2 \xrightarrow[\text{Peroxide}]{\text{HBr}} \text{A} \xrightarrow{\text{aq. KOH}} \text{B}$, B is
 a) propanol-2 b) propanal-1 c) propanol-1 d) propanal-2
22. Freon-12 is
 a) CF_3Cl b) CHCl_2F c) CF_2Cl_2 d) DDT
23. The major products obtained when chlorobenzene is nitrated with HNO_3 and conc. H_2SO_4
 a) 1-chloro-4-nitrobenzene b) 1-chloro-2-nitrobenzene
 c) 1-chloro-3-nitrobenzene d) 1-chloro-1-nitrobenzene
24. The name of $\text{C}_2\text{F}_4\text{Cl}_2$ is _____.
 a) Freon-112 b) Freon-113 c) Freon-114 d) Freon-115
25. Which of the following pair functional groups represents ambident nucleophiles?
 a) $-\text{SH}$ & $-\text{OH}$ b) $-\text{CN}$ & $-\text{NO}_2$ c) $-\text{Br}$ & $-\text{Cl}$ d) $-\text{O}$ & $-\text{CHO}$
26. Of the following compounds, which has the highest boiling point?
 a) n-Butyl chloride b) Isobutyl chloride
 c) t-Butyl chloride d) n-propyl chloride
27. Which one of the following is used to test primary amines?
 a) Schiff's test b) Carbylamine test c) Dye test d) Silver mirror test
28. Benzene reacts with Cl_2 in the presence of FeCl_3 and in absence of sunlight to form
 a) Chlorobenzene b) Benzyl chloride
 c) Benzal chloride d) Benzene hexachloride
29. Chlorobenzene can be prepared by reacting benzene diazonium chloride with
 a) HCl b) $\text{Cu}_2\text{Cl}_2/\text{HCl}$ c) $\text{Cl}_2/\text{AlCl}_3$ d) HNO_2
30. The name of DDT
 a) p, p' - dichloro diphenyl trichloro ethane b) p, p' - dichloro diphenyl trichloro ethene
 c) p, p' - dichloro diphenyl tetrachloro benzene d) p, p' - tetra chloro ethane

Chemistry
Class - 11 One mark Test - 9

Answer Key

Lesson - 14

- | | |
|--|--|
| <p>1. d) Chloroform</p> <p>2. b) 4-Bromopent-2-ene</p> <p>3. c) 3-chloro-1-propane</p> <p>4. c) Propyl chloride with KCN</p> <p>5. b) IF both assertion and reason are true but reason is not the correct explanation of assertion</p> <p>6. b) Conc. HCl + Anhydrous ZnCl₂</p> <p>7. d) Fluoromethane</p> <p>8. c) benzene</p> <p>9. c) Finkelstein reaction</p> <p>10. a) acetaldehyde</p> <p>11. a) $3^\circ > 2^\circ > 1^\circ$</p> <p>12. c) DMF (N,N'-dimethyl Formamide)</p> <p>13. b) 2-Methyl-2-propanol</p> <p>14. a) 1-chloropropane < isopropyl chloride < 1-chlorobutane</p> <p>15. b) Aqueous KOH</p> | <p>16. d) benzyl chloride</p> <p>17. b) $\begin{array}{c} R-CH-R \\ \\ OH \end{array}$</p> <p>18. b) Allyl</p> <p>19. a) 1-chloro-4-nitro benzene</p> <p>20. .</p> <p>21. b) propanal - 1</p> <p>22. c) CF₂Cl₂</p> <p>23. a) 1-chloro-4-nitrobenzene</p> <p>24. c) Freon - 114</p> <p>25. b) -CN- & -NO₂</p> <p>26. a) n-Butyl chloride</p> <p>27. b) Carbylamine test</p> <p>28. a) Chlorobenzene</p> <p>29. b) Cu₂Cl₂ / HCl</p> <p>30. a) p,p'-dichloro diphenyl trichloro ethane.</p> |
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