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# AP – POLYCET

2017

Time : 2 Hours

Total Marks : 120

## SECTION –III

### Chemistry

91. Which electromagnetic waves are sensitive to our eyes?
- A. X-rays
  - B. Ultraviolet rays
  - C. Visible rays
  - D. Microwaves
92. The number of possible orbitals in a sub-shell with the angular momentum quantum number ( $l$ ) is
- A.  $l + 1$
  - B.  $2l + 1$
  - C.  $2(2l + 1)$
  - D. 0 to  $n - 1$
93. The atomic weight of a bivalent element is 9. The equivalent weight of the same element is
- A. 18
  - B. 13.5

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- C. 4.5  
D. 3
94. 4f elements are called
- A. lanthanides
  - B. actinides
  - C. noble elements
  - D. transitional elements
95. The valency of aluminium in  $\text{Al}_2\text{O}_3$  with respect to oxygen is
- A. 2
  - B. 3
  - C. 1
  - D. 1.5
96. Which of the following ions is larger in size?
- A.  $\text{Na}^+$
  - B.  $\text{Mg}^{2+}$
  - C.  $\text{Al}^{3+}$
  - D.  $\text{H}^+$
97. The correct ionization energy order in the following sets of elements is
- A.  $\text{C} > \text{O} > \text{N}$
  - B.  $\text{N} > \text{O} > \text{C}$
  - C.  $\text{O} > \text{N} > \text{C}$
  - D.  $\text{N} > \text{C} > \text{O}$

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98. The formula of the compound formed by  $A^{3+}$  and  $B^{2-}$  is
- A.  $A_3B_2$
  - B.  $A_2B_3$
  - C.  $AB$
  - D.  $A_2B$
99. The ratio of coordination number of  $Na^+$  and in face-centred cubic lattice crystal of  $NaCl$  is
- A. 6 : 6
  - B. 6 : 1
  - C. 1 : 6
  - D. 3 : 4
100. The numbers of bond pairs of electrons and one pair of electrons in  $O_2$  molecule respectively are
- A. 2, 2
  - B. 2, 1
  - C. 4, 2
  - D. 2, 4
101. Which of the following molecules has highest bond dissociation energy?
- A.  $F - F$
  - B.  $Cl - Cl$
  - C.  $Br - Br$
  - D.  $I - I$

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102. The numbers of hybrid orbitals and atomic orbitals involved in  $\text{BF}_3$  respectively are

- A. 2, 2
- B. 4, 4
- C. 3, 1
- D. 3, 3

103. which of the following metals has lowest reactivity?

- A. Na
- B. Al
- C. Au
- D. Cu

104. The fusible product formed when the impurity present in ore reacts with flux is called as

- A. gangue
- B. slag
- C. mineral
- D. alloy

105. Blast furnace is mainly suitable for

- A. smelting
- B. roasting
- C. calcination
- D. oxidation

106. 2-methylpropane is also called as

- A. Iso-propane
- B. n-butane

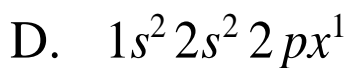
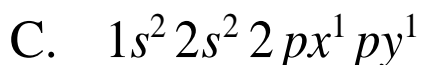
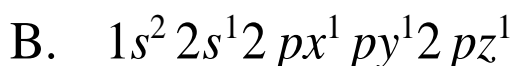
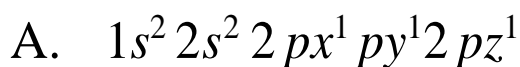
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- C. n-propane  
D. Iso-butane
107. The IUPAC name of  $\text{HO} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{COOH}$  is
- A. 1-hydroxy-4-butanoic acid  
B. 4-carboxyl-1-butanol  
C. 3-hydroxy-1-propanoic acid  
D. 4-hydroxy-1-butanoic acid
108.  $\text{CH}_3 - \text{CH}_2 - \text{OH}$  reacts with alkaline  $\text{KMnO}_4$  and heats to form first the compound A, which further oxidizes to form the compound B. The name of the compound B is
- A. ethanol  
B. ethanal  
C. formaldehyde  
D. acetic acid
109. But-2-yne reacts with  $\text{H}_2$  in Ni catalyst to form but-2-ene. This reaction is an example for
- A. substitution reaction  
B. addition reaction  
C. elimination reaction  
D. rearrangement reaction
110. The hardest material among the allotropes of carbon is .
- A. diamond

B. graphite

C. coke

D. coal

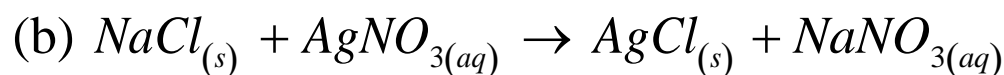
111. the electric configuration of carbon in excited state is



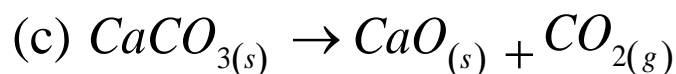
112. Match the following



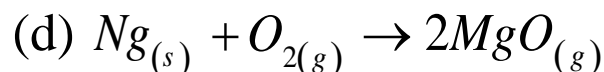
(i) Decomposition reaction



(ii) Combination reaction



(iii) Displacement reaction



(iv) Double displacement reaction

A. (a) (b) (c) (d)

(iii) (iv) (i) (ii)

B. (a) (b) (c) (d)

(iv) (iii) (i) (ii)

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C. (a) (b) (c) (d)  
(iii) (iv) (ii) (i)

D. (a) (b) (c) (d)  
(iii) (i) (iv) (ii)

113. Stainless steel is an alloy of

- A. Fe + Cr + Ni + C
- B. Fe + Cu + Ni + Zn
- C. Fe + Mn + C + Cu
- D. Fe + C + Pb + Mn

114. Which enzyme in apples, pears and banana fruits can change its colour with oxygen on cut surface of fruits?

- A. Zymase
- B. Polyphenol
- C. Polyphenol oxidase
- D. Maltase

115.  $\text{Fe}_2\text{O}_3 + \text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$ . In this reaction, which statement is correct?

- A.  $\text{Fe}_2\text{O}_3$  is oxidized.
- B. Al is reduced.
- C. Al is oxidized.
- D. Fe is reduced.

116. The number of moles of HCl can react with one mole sodium carbonate is

- A. 1

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B. 3

C. 2

D.  $\frac{1}{2}$

117. The base used in soda-acid fire extinguishers is

A.  $\text{Na}_2\text{CO}_3$

B.  $\text{NaHCO}_3$

C.  $\text{NaOH}$

D.  $\text{Na}_2\text{O}$

118. The pH of milk of magnesia is

A. 7-8

B. 6-7

C. 10-11

D. 4-5

119. Which of the following salt solutions is basic in nature? I .

A.  $\text{NaCl}$

B.  $\text{NH}_4\text{Cl}$

C.  $\text{Na}_2\text{CO}_3$

120. Bohr's model explains the line spectra of

A.  $\text{H}^+$  ion

B. H atom

C. He atom

D.  $\text{Li}^+$  ion