



CHEMISTRY

BOOKS - CHHAYA CHEMISTRY (BENGALI ENGLISH)

PREVIOUS YEARS QUESTION PAPER 2019

Wbchse 2019 Part A

1. KBr undergoes 80% dissociation in its 0.5(M) aqueous solution. Calculate osmotic pressure of the solution at 27°C temperature.





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2. What is azeotropic mixture ? Can it be considered as ideal solution ?



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3. What is peptisation ? Give one example.



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4. Mention two differences between bleaching action of SO_2 and Cl_2 .



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5. Which of the halogen hydracids forms bi-salts ?

Write reasons.



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6. Which type of isomerism is known by the two complexes:

$[Co(NH_3)_5SO_4]Br$ and $[Co(NH_3)_5Br]SO_4$? How would you distinguish between two complexes ?



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7. Write the name of monomer units of dacron and mention one use of it.



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8. Which type of stiochiometric defects is shown by AgBr crystal ?



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9. Chromium (atomic mass = 52) metal has body-centred cubic structure. The radius of chromium atom is 124.3 pm. Calculate the density of chromium metal.



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10. What do you mean by packing fraction of cubic unit cell ?



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11. Calculate packing fraction of a face-centred cubic unit cell .



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12. What is the vapour pressure of pure water at $100^{\circ}C$ temperature ?



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13. Write cell reaction and calculate electrical work obtained from the following galvanic cell at standard condition . $Mg|Mg^{2+}(aq)||Ag^{+}(aq)|Ag$ [Given :

$$E^0_{Mg^{2+}|Mg} = -2.36\text{vo} < \text{ and } E^0_{Ag^{+}|Ag} = 0.80\text{vo} < .]$$



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14. Which type of ores is concentrated by froth floatation process ?



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15. Which of the following are coloured in aqueous solution ? Give reasons : V^{3+} , Cu^{+} , Sc^{3+} , Fe^{3+}



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16. Which of the following oxides are amphoteric ?

Mn_2O_7 , CrO_3 , Cr_2O_3 , V_2O_5



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17. What happens when MnO_4^{2-} ion is kept in acid medium ? Write balanced equation.



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18. Write R/S configuration of  and 



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19. Write structural formula of A for the reaction



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20. Distinguish between propanone and pentan-3-one by a suitable chemical test.



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21. Write the structural formulae of A,B,C,D in the reaction



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22. Write equation of the following conversion .

Salicylic and aspirin.



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23. Write structural formulae of products obtained in the reaction



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24. Write structural formulae of products obtained in the reaction



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25. Mention one use of Lucas' reagent.



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26. Convert aniline to fluorobenzene .



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27. Write structural formula of the compound A to D:



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28. An organic compound $A(C_3H_8O)$ on treatment with Cu dust at 573K gives B. B does not reduce Fehling's solution but gives a yellow precipitate of compound C with $I_2 / NaOH$. Deduce the structures of A, B and C and their IUPAC names.



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29. The following compound is an example of peptide.



(r) Write Zwitterion structures of the compound.

(s) How many amino acids will be obtained on hydrolysis of the compound ?



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30. Write equation for the reaction of glucose with periodic acid.



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31. Draw the graph of half-life period ($t_{1/2}$) versus initial concentration of reactant $(A)_0$ for a zero order reaction. Given reasons in favour of your answer.



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32. The rate of a reaction at 400 K is 10 times than the rate of the reaction at 200 K . Calculate activation energy of the reaction.



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33. The unit of rate constant of a chemical reaction is $L^2 \cdot mol^{-2} \cdot s^{-1}$. Calculate order of the reaction.



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34. The rates of a first order reaction after 10mins and 20 mins from the commencement of the reaction are $0.04 mol \cdot L^{-1} \cdot s^{-1}$ and $0.03 mol \cdot L^{-1} \cdot s^{-1}$ respectively. Calculate half-life period of the reaction.



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35. What is the shape of XeF_4 molecule ? Write the chemical equation of the reaction of XeF_4 and KI ?



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36. What is Nessler's reagent ? Where is it used ?



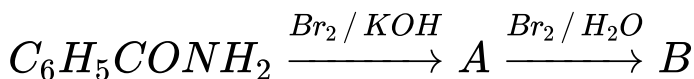
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37. IF_7 can be prepared but BrF_7 cannot be prepared . Why ?



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38. Write structural formula of the compounds A to F.



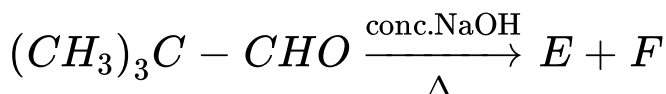
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39. Write structural formula of the compounds A to F.



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40. Write structural formula of the compounds A to F.



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41. Convert the Benzaldehyde to cinnamic acid.



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42. Convert the Acetic acid to Acetaldehyde.



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43. What is the reason for the reducing property of formic acid ? Give example of its reducing property.



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44. Mention the reagents used for the conversion.



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45. Mention the reagents used for the conversion.



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46. Mention the reagents used for the conversion.



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47. Mention the reagents used for the conversion.



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48. Mention the reagents used for the conversion.



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49. Mention the reagents used for the conversion.





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Wbchse 2019 Part B

1. Which of the following is strongly attracted by magnetic field /

- A. Paramagnetic
- B. Diamagnetic
- C. Ferromagnetic
- D. Antiferromagnetic

Answer: C



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2. Charge carried by 1 mole PO_4^{3-} ions is

A. 96500 C

B. 32167 C

C. 298500 C

D. 193000 C

Answer: A



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3. Which of the following is lyophilic colloid ?

A. Milk

B. Blood

C. Gold sol

D. Gum

Answer: A



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4. Which of the following is strongest base ?



Answer: C



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5. Which of the following transition elements show +7 oxidation state ?



B. Mn

C. Fe

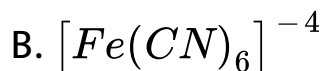
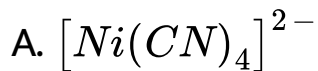
D. Ni

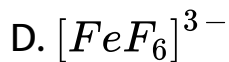
Answer: B



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6. In which of the following metal ions hybridisation state in sp^3d^2 /



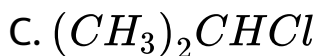
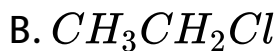


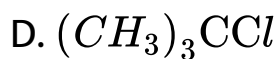
Answer: C



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7. Which of the following is most reactive in S_N2 reaction ?



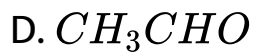
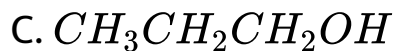
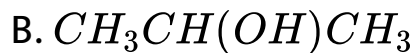
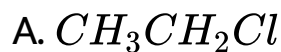


Answer: B



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8. Which of the following cannot be identified by iodoform test ?

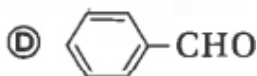
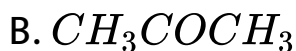
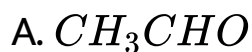


Answer: C



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9. Which of the following compounds does not respond to aldol condensation reaction ?



D.

Answer: C



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10. Which of the following bases is not present in RNA ?

A. Adenine

B. Guanine

C. Thymine

D. Uracil

Answer: D



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11. Which of the following bases is not condensation polymer ?

A. Bakelite

B. Nylon

C. Melamine-formaldehyde resin

D. Teflon

Answer: D



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12. Which of the following is antihistamine drug ?

A. Bromopheniramine

B. Omiprazole

C. Chloramphenicol

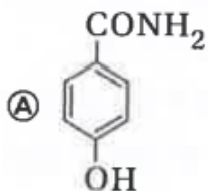
D. Norethyrine

Answer: D

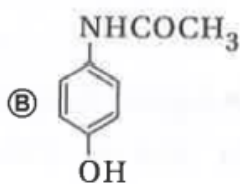


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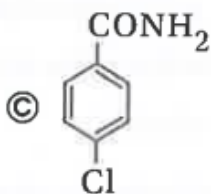
13. Which of the following is paracetamol ?



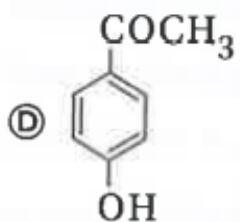
A.



B.



C.



D.

Answer: D



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14. Arrange Li^+ , Na^+ , and Rb^+ ions in the ascending order of their molar ionic conductance (

Λ^0)



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15. What is the unit of electro-chemical equivalent ?



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16. By which property of colloid, we can distinguish between colloidal solution and true solution of same colour ?



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17. Why is magnetic moment of ferric compounds more than ferrous compounds ?



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18. Write general electronic configuration of actinoids ?



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19. Why is BHA added in butter ?



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