22363

12425

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

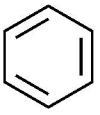
(3) Figures to the right indicate full marks.

(4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE : **10**

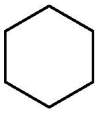
(a) Identify aromatic compound from following :



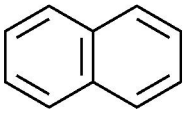
(1) benzene

, $CH_2 = CH_2$

(2) Ethylene



(3) cyclohexane



(4) naphthalene

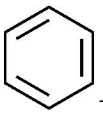
(b) Draw structure of

(i) Benzene sulphonic acid

(ii) Phenol

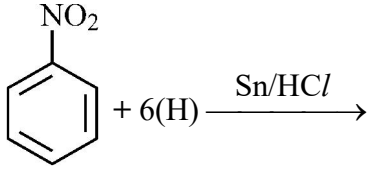
(iii) Nitro benzene

(iv) m dinitro benzene

(c)  $\xrightarrow[H_2SO_4]{HNO_3}_{60\ °C}$?

Identify the product formed in above reaction and draw its structure.

(d) Predict the product of following reaction :



(e) Draw resonating structure of naphthalene.

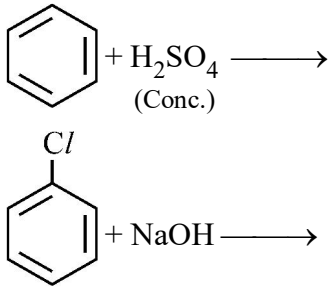
(f) Define colour index. Explain the concept in brief with suitable example.

(g) List the factors affecting on the adsorption of light by the dyes.

2. Attempt any THREE : **12**

(a) Explain the method of separating benzene and toluene from coaltar.

(b) Complete following chemical reactions and predict the products :



(c) Explain diazotization process with suitable chemical reactions.

(d) Explain the following chemical properties of naphthalene :

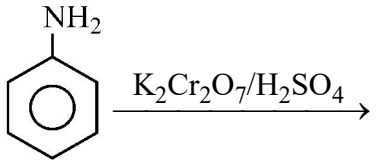
(i) Oxidation

(ii) Sulphonation

3. Attempt any THREE : **12**

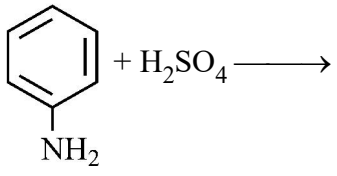
(a) Complete following reaction and predict the products :

(i)



aniline

(ii)



(b) Differentiate between dyes and pigment on the basis of their solubility, chemical bonding and fastness.

(c) Explain following concepts in brief :

(i) Chromophore

(ii) Auxochrome

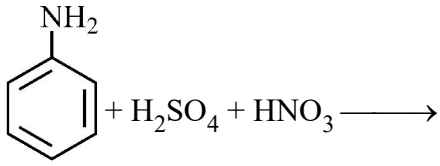
Illustrate with suitable examples.

(d) Explain general characteristics of the dyes.

4. Attempt any THREE : **12**

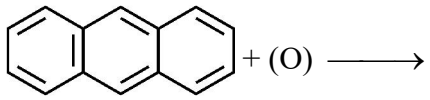
(a) Suggest the reagents required for preparing toluene from benzene. Write the reaction to justly your answer.

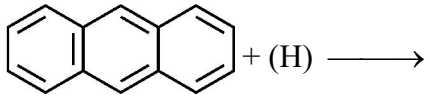
(b) Predict the product of following reaction :

(i) 

(ii) Write applications of aniline.

(c) Complete following reaction and name the product :

(i) 

(ii) 

(d) Explain the method of preparation of H acid with suitable chemical reactions.

(e) Define the term substantivity. Explain the relation between chemical structure of dye and substantivity.

5. Attempt any TWO : **12**

(a) Compare following chemical properties of benzene and toluene. Justify your answer with suitable chemical reactions :

(i) Sulphonation

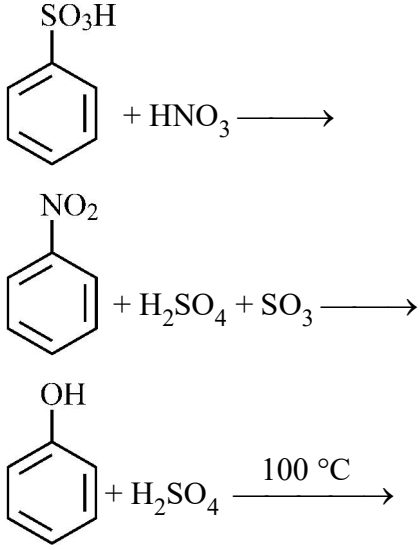
(ii) Nitration

(b) Reactive Blue ME 4B is a name given to a dye. Identify the terms involved in label and describe method of applying the dye on fibre.

(c) Describe blue shift and red shift caused by presence of certain auxochromes in dye structure. Illustrate your answer with suitable diagram.

6. Attempt any TWO : **12**

(a) Predict the product of following reactions and name the products :



(b) Certain dye is labelled as Acid orange II. Explain the terms involved in label. Describe the method of applying the dye on fibre.

(c) Chemical structure and fastness properties are depending on each other. Give the reason and illustrate your answer with suitable example.