THE TEXTAILE ASSOCIATION (INDIA)
A.T.A. (REVISED) PART-I EXAMINATION-2017
PAPER-A1.1

BASIC ENGINEERING SCIENCE

Date: 23-12-2017 Marks: 100 Time: 10am to 1pm

Instructions:
1. Attempt any THREE questions from each section, out of which Question 1 and Question 5 is compulsory.
2. Answer each next main question on new page.
3. Figure to the right indicate full marks.
4. Illustrate your answer with sketches and flow chart wherever necessary.
5. Use non-programmable electronic pocket calculator permissible.
6. Mobile and any other communication devices are not allowed in exam hall.
7. Assume suitable data wherever necessary.

APPLIED PHYSICS

SECTION-1

(Use separate answer book)

Q.1 Attempt any TEN of the following

a. Mention the four types of lenses.

b. Define refraction of light.

c. Give some uses of X-rays.

d. Define modules of rigidity.

e. The hygrometer is used to measure ............... 

f. The dimensional formula for angular velocity

(i) $M^0 L^0 T^{-1}$ (ii) $M^{-1} L^0 T^{-1}$ (iii) $M^0 L^{-1} T^{-1}$ (iv) $M^1 L^0 T^0$

g. Define polarization of light.

h. Define interference and diffraction of light.

i. Define photoelectric effect.

j. Define vapour pressure and Absolute humidity.

k. The unit of luminous intensity is

(i) candela (ii) watt (iii) lumen (iv) ampere

l. Define viscosity and surface tension.

m. Define stress and strain with SI units.

Q.2 a. Define the angle of contact of a liquid with a solid surface. (05)
b. Explain brief moisture meter. (05)

c. Explain coefficient of viscosity. Describe an accurate method to determine the coefficient of viscosity of a liquid. (05)

Q.3

a. What is Reynolds' number? What is its significance? (05)

b. State and explain Hook's law. Define bulk modules. (05)

c. Derive an expression for the rise of liquid in a capillary tube. (05)

Q.4

a. Mention the types of diffraction of light. What are X-rays? How they are produced? Discuss their properties. (07)

b. Explain with neat figure, the construction and working of simple and compound microscope. (08)
THE TEXTILE ASSOCIATION (INDIA)
A.T.A.(REVISED) EXAMINATION –2017
PART II- PAPER- A 1.1
BASIC ENGINEERING SCIENCE

Date: 23.12.2017  Time: 10.00 am to 100 pm
Instructions:
1. Attempt six questions out of which Q.1and Q.5 are compulsory
2. Answer each main question on new page
3. Figures to the right indicate full marks
4. Illustrate your answers with sketches and flow-charts wherever necessary
5. Use of non-programmable electronic calculator permissible
6. Mobile and any other communication devices are not allowed in exam hall
7. Assume suitable data wherever necessary.

APPLIED CHEMISTRY
SECTION-2
(Use separate answer book)

Q5  a. Answer any five
   i. Define atomic number and atomic mass number. What is the atomic number and atomic mass number of carbon?
   ii. Define and give examples of Arrhenius acid and base.
   iii. What is hard water and soft water?
   iv. What is homologous series. Give example.
   v. Which is the functional group present in alcohols and aldehydes. Give two examples of each?
   vi. Draw the structural formula of benzene, toluene.

Q6  Write short note on any three
   i. Arrhenius Theory of ionization.
   ii. Characteristics of aliphatic compounds
   iii. Properties of Hydrogen peroxide.
   iv. Classification of Organic compounds.

Q7  a. What are disadvantages of hard water.
    b. Define and give two examples of isotopes.
    c. What are fundamental particles of atom?

Q8  a. What are alkanes? Give examples and uses of two alkanes.
    b. Give chemical name and molecular of bleaching powder. Give its two chemical properties.
    c. What are halogen derivatives? Give any two examples. Give its uses.

**********************

Page 1 of 1