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SARDAR PATEL UNIVERSITY

M.Sc. 3rd Semester (Surface Coating Technology) Examination (CBCS)

Saturday, October 29 2016

Time: 2:00 pm to 5:00 pm

Course No. : PS03ESCT03

Subject: Technology of Packaging & Printing Inks

Total Marks: 70

- N.B. (1) Marks allotted to the question are on its RHS
(2) Illustrate your answers wherever necessary with the help of neat sketches & chemical equations

Q.1 Choose the correct option

- (1) Which printing is not called as relief printing process? (1)
a. Letterpress b. Lithography c. Flexographic d. Gravure
- (2) The approximate ink-film thickness applied to the substrate from the conventional Gravure printing process is _____ (1)
a. 1.5-2.5 μm b. 3-4 μm c. 2-4 μm d. 7-8 μm
- (3) Which printing process has water fountain? (1)
a. Letterpress b. Lithography c. Flexographic d. Gravure
- (4) Initially which printing process is called as aniline printing process? (1)
a. Letterpress b. Lithography c. Flexographic d. Gravure
- (5) In single-color printing, NIP technologies using powder toners create an ink layer on the paper that has a thickness of approximately _____ (1)
a. 1.5-2.5 μm b. 3-4 μm c. 2-4 μm d. 5-10 μm
- (6) With _____, the imaging is carried out on the basis of photo-electronic effects. (1)
a. electrophotography b. ionography c. magnetography d. thermography
- (7) _____ packaging is the material that first envelope the product and holds it and it is the package which is in direct contact with the contents. (1)
a. Primary b. Secondary c. Tertiary d. None of these
- (8) _____ plastic acts as an effective barrier against moisture and remains solid at room temperature also resists insects, rot and other chemicals. (1)
a. HDPE b. LDPE c. LLDPE d. None of these

Q.2 Answer any seven of the following (14)

- 1 Give classification of impact and non-impact printing process.
- 2 Explain the principle by which lithography printing process works.
- 3 Write the function of fountain solution in OSL.
- 4 Write application of Gravure and Lithography printing process.
- 5 State the purpose of anilox roll in flexo printing machine.
- 6 What is the principle of Screen printing process?
- 7 What is packaging? Enlist function of it.
- 8 What is biotic spoilage and abiotic spoilage?
- 9 What is shelf life?

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- Q.3(a) Discuss in detail factors that affect ink formulation. (6)
(b) Enlist various plate used in OSL. Explain in detail pre-sensitized plate making for OSL. (6)
OR
(b) What are the different methods by which printing ink dry? Discuss in detail. (6)
- Q.4(a) Discuss different press used in letter press printing. (6)
(b) Write a note on Gravure printing process. (6)
OR
(b) Write a note on toners for NIP processes. (6)
- Q.5(a) Discuss about 'Lifestyle changes and their impact on packaging'. (6)
(b) Explain packaging function in detail. (6)
OR
(b) Discuss properties, uses and advantages of Aluminum and Tin metal used as packaging. (6)
- Q.6(a) Write a note on different types of security ink. (6)
(b) Write a note on tetra pack aseptic processing and packaging. (6)
OR
(b) Discuss in detail types of paperboards used in packaging. (6)

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