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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

IV SEMESTER B.TECH. (PRINT AND MEDIA TECHNOLOGY)

MAKEUP EXAMINATIONS, JUNE 2019

SUBJECT: OFFSET PRINTING [PMT 2201]

REVISED CREDIT SYSTEM

(17/06/2019)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

- 1A.** Explain with neat diagrams, the working principles of Electromechanical early sheet, Mechanical extra sheet and Photoelectric late sheet detectors.
- 1B.** Describe the sequence of splicing operations of a zero speed splicer with neat diagrams.
- 1C.** What are the two types of non-contact dampening systems? Explain their working principles with neat diagrams.

[03 + 03 + 04]

- 2A.** Explain the working principles of two types of automatic blanket washers used on offset presses with neat diagrams.
- 2B.** Explain the inline and CIC tandem press configurations with neat diagrams.
- 2C.** Describe the following devices and explain their functions with neat sketches.
 - a. Suction slow-down rollers
 - b. Blow-downs
 - c. Sheet decurler
 - d. Air cushion drums

[03 + 03 + 04]

- 3A.** Explain the working principle of "Tilt box" and "side-guide web sensor" with neat diagrams.
- 3B.** Describe the working principle of stroboscope, web pre-conditioners and web break detectors used on web offset presses.

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3C. Explain the construction and functions of driven and non-driven rollers in an ink train with neat diagram.

[03 + 03 + 04]

4A. In web offset press, discuss about the web tension variables and their control mechanisms in detail.

4B. Explain about maintenance, care and storage of ink rollers.

4C. Define the problem, list the causes for the problem and suggest remedies for the following:

- i. Roller glazing ii. Set-off iii. Blitering iv. Plate cracking

[03 + 03 + 04]

5A. Explain the working principle of the following in-line finishing of web with simple diagrams:

- i. Remoistenable pattern gluer ii. Backbone gluer iii. Perforators

5B. Why are the plate and blanket cylinders packed when mounted with plate and blanket? Explain the consequences of insufficient and excessive packing of cylinders.

5C. i. On a non-bearer contact sheetfed press, the plate and blanket undercuts are 0.02" and 0.08" respectively. Plate and blanket thicknesses are 0.011" and 0.072" respectively, Plate height above the bearer is 0.012" and blanket height below the bearers is 0.002". Plate and blanket cylinder bearer gap is 0.005". Calculate the packing thicknesses of plate and blanket. What is the squeeze between plate and blanket cylinder?

ii. Describe the dry offset plate construction and the method of preparing a positive working waterless plate.

[03 + 03 + (02 + 02)]