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3rd Sem / Mechanical Engineering/ Mechanical (Tool & Die Design)

Subject : Mechanical Engineering Drawing -II

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Which manufacturing concept deals with the permissible variation in size and geometry of a part. (CO1)

a) Gears
b) IC engine parts
c) Limits, Fits, and Tolerance
d) Screw jack

Q.2 In a shaft-hole system, what is the fit called when the shaft size is smaller than the hole size? (CO1)

a) Clearance fit b) Transition fit
c) Interference fit d) Running fit

Q.3 Which type of gear is used to transmit power between parallel shafts? (CO6)

a) Spur gear b) Bevel gear
c) Worm gear d) Helical gear

Q.4 What is the purpose of bearings in mechanical systems? (CO2)

a) To provide torque to the system
b) To prevent misalignment of shafts
c) To support and reduce friction between moving parts
d) To act as a sealing element

Q.5 Which of the following is NOT a common material for IC engine pistons? (CO5)

a) Aluminum alloy b) Cast iron
c) Stainless steel d) Plastic

Q.6 A tolerance of $\pm$0.01mm means that : (CO1)

a) The dimension can vary between +0.01 mm and -0.01 mm
b) The dimension can vary between +0.01 mm and +0.01 mm
c) The dimension must be exactly 0.01 mm
d) The dimension can vary by up to 0.01 mm in either direction.

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 H7/g6 in hole basis system H denotes _____. (CO1)

Q.8 A _____ is a simple machine used for lifting heavy loads vertically. (CO4)

Q.9 In spur gears the profile of teeth is _____. (CO6)

Q.10 Define module. (CO6)

Q.11 The parts of a screw jack that moves up and down to raise or lower a load is called _____. (CO4)

Q.12 Th e purpose of connecting rod in IC Engines.(CO5)

SECTION-C

Note: Long answer type questions. Attempt any Four questions out of Five questions. (4x12=48)

Q.13 Make a proportionate free sketch of screw jack. (CO4)

Q.14 Make a proportionate free hand sketch of drilling jig. (CO3)

Q.15 Draw the profile of involute teeth for a gear having 24 teeth and module 10 mm. Assume pressure angle 20□ (CO6)

Q.16 Figure A shows the detail drawing of a connecting rod for a petrol engine. Assemble all the parts together and draw the following views. (CO5)

i) Front elevation ii) Sectional top view

Assume all the necessary dimensions. Selects a suitable scale. Also prepare Bill of materials

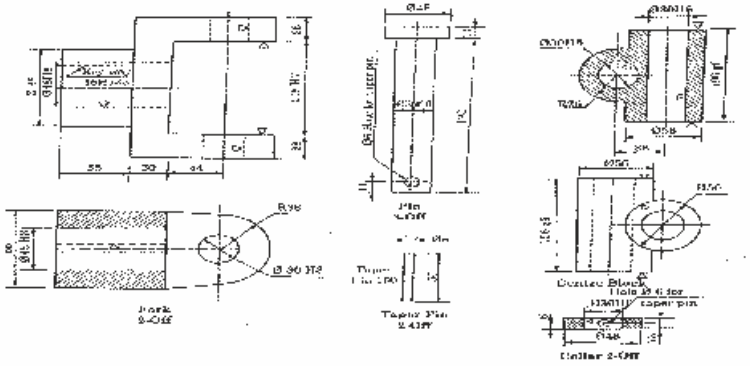

Figure (B): Details of Universal Coupling

Q.17 Figure B shows the detail drawing of Universal coupling. Assemble all the parts together and draw the following views. (CO2)

I. Front view

II. End view

III. Sectional top view

Assume all the necessary dimensions Select a suitable scale.

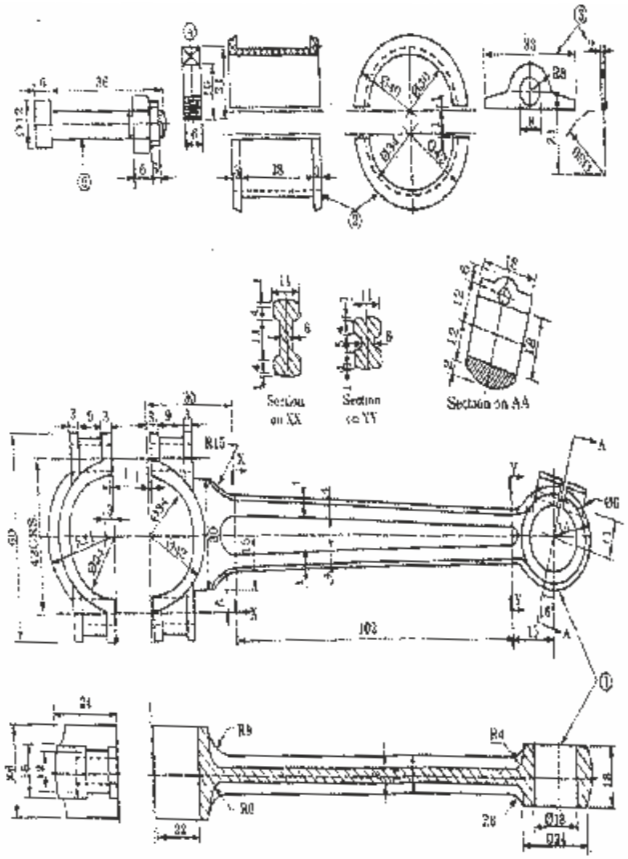

Figure (A): Details of Connecting rod