STRUCTURAL ENGINEERING DRAWING

Course code	Course title	No. Of period/week	Total no. Of periods	Marks for Formative Assessment	Marks for Summative Assessment
C-506	Structural Engineering Drawing	04	60	40	60

MODEL PAPER – BOARD DIPLOMA EXAMINATION, (C–23)

DCE—FIFTH SEMESTER EXAMINATION

STRUCTURAL ENGINEERING DRAWING- II (C-506)

Time: 3 hours] **[Total Marks:60**

PART—A

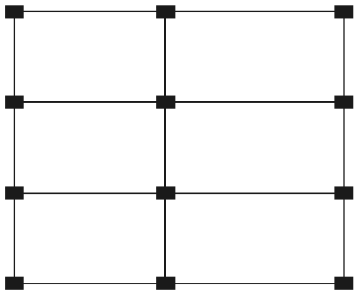
4×5=20

Instructions : (1) Answer **all** questions.

(2) Each question carries **four** marks.

(3) Any missing data may be assumed suitably.

1. Redraw the figure given below and mark the columns and beams asper Grid Reference Scheme.



2. State any two guiding principles each for positioning of columns and beams in structural planning of buildings.

3. Draw the cross section of an isolated square column footing with thefollowing specifications :

Column : 230 × 230 mm with 4 nos. of 16 mm dia steel and lateralties of 8

mm @ 150 mm c/c.

Footing : 1200 × 1200 mm with 12 mm bars at 150 mm c/c both waysThickness of

footing : 350 mm

Thickness of base course : 150 mm. Assume covers as 50 mm.

4. Prepare the bar bending schedule and estimate the quantity for the given reinforcement of the simply supported RCC beam with the following data :

Clear span of beam : 5000 mm, Width of beam : 230 mm, Overalldepth of beam : 450 mm, Width of support : 230 mm (full bearing)

Main reinforcement : 20 mm bars 4 nos. (2 bars cranked at 700 mmfrom the face of support)

Hanger bars: 12 mm 2 nos.

Covers : Top and bottom : 25 mm End cover : 40 mm.

5. Prepare bar bending schedule and calculate the steel quantity for theone way slab with the following data :

Size of room	:	7000 mm × 3000 mm
Wall thickness	:	300 mm
Slab thickness	:	130 mm
Main reinforcement	:	10 mm @125 mm c/c. All the bars are cranked on one side and cranks placed alternatively at a distance of 300 mm fromthe face of support.
Distribution Steel	:	8 mm @150 mm c/cAll

covers are of 20 mm.

PART-B **2×20=40 Marks**

Instructions: (1) Answer all questions.

(2) Each question carries twenty marks.

(3) All parts must be drawn to scale.

(4) Any missing data may be assumed suitably.

1. An RCC lintel with sunshade has the following specifications :

Clear span of lintel	:	1500 mm
Width of wall	:	230 mm
Size of lintel	:	230 mm × 200 mm
Bearing on walls	:	150 mm
Projection of sunshadefrom face of the wall	:	600 mm
Thickness of sunshade	:	100 mm to

50 mmReinforcement of Lintel :

Main reinforcement	:	3 nos. Of 12 mm dia (all straight bars)
Hanger bars	:	2 nos. Of 10 mm dia
Stirrups	:	6 mm dia. 2-legged at 150

mm c/cReinforcement of Sunshade :

Main bars	:	10 mm dia bars at 140

mm c/cDistribution steel : 6 mm dia @ 120 mm c/c

Draw to a scale of 1 : 10 :

(a) Longitudinal section of lintel 10+10

(b) Cross-section of lintel with sunshade 10Width of canal bund = 900 mm

2. Draw the reinforcement details of a simply supported RCC two way slab whose corners arefree to lift, with the following specifications :

Size of the room—4·0 m × 5·0 m
Edge conditions—simply supported, corners not held downOverall depth of slab—140 mm
Bearing on walls—230 mmMaterials:
Concrete—M-20 grade ,
Steel—Fe 415Reinforcement:

Along shorter span—# 12 at 200 mm c/c
(alternate bars are cranked at a distance of 400 mm from the face of the support)

Along longer span—# 10 at 250 mm c/c
(alternate bars are cranked at a distance of 500 mm from the face of the support)

Provide 3#8 hanger bars at each edge to keep top bars in position.Covers:

Bottom clear cover 12 mmTop clear cover 12 mm End covers 20 mm

(i) Bottom plan of the reinforcement 10+5+5
(ii) Top plan of the reinforcement (iii)Cross-section along the shorter span

C23- C-508: Life Skills

Course Title : Life Skills	**Course code : C23- C-508 (Common to all Branches)**
Year/ Semester : V/ VI Semester	**Total periods : 45**
Type of Course : Lab Practice	**Max Marks : 100 (Sessional 40 + External 60)**

ASSESSMENT
C23-Common-508: Life Skills (Lab Practice)

- The assessment for C23-Common 508 is on par with all other practical subjects comprising 40 marks for Internal Assessment and 60 marks for External examination attaining the final total of 100 Marks.
- The Internal Assessment can be conducted in the form of Assignments in all the 11 Units together, taking the average for 40 marks as suggested below.
- The Assessment sheet provided after each lesson in the Life Skills workbook should be considered as assignment (A) for 10 marks. In addition to that, another assignment (B) can be conducted for 10 marks in each Unit, awarding total average of 10 marks for each Lesson. Finally, the cumulative total should be averaged to 40 marks as Internal marks.
- The questions for Assignment can be customized according to the topic and need. We can also consider the questions of assignments given after each lesson in the workbook.
- The assignment questions can also be given based on case studies, personal experiences, observations, making inferences/ analysis/ forming opinions, solving puzzles, questions on logical thinking, reasoning, evaluating and writing reviews, etc.

Calculating Internal marks through Assignments				
Name of the student:		**PIN:**	**Branch:**	**Academic Year:**
S. No.	**Title of the Unit / Lesson**	**Assignment A: 10Marks (assessment sheets after each lesson)**	**Assignment B: 10 Marks**	**Total Marks in each Unit/ Lesson (Average for 10 Marks)**
1	Attitude			
2	Adaptability			
3	Goal setting			
4	Motivation			
5	Time Management			
6	Critical Thinking			
7	Creativity			
8	Problem Solving			
9	Team work			
10	Leadership			