



SUMMER – 2022 EXAMINATION






Subject Name: BPD

Model Answer

Subject Code:22405

**Important Instructions to examiners:**

- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills).
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and model answer.
- 6) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
- 7) For programming language papers, credit may be given to any other program based on equivalent concept.
- 8) As per the policy decision of Maharashtra State Government, teaching in English/Marathi and Bilingual (English + Marathi) medium is introduced at first year of AICTE diploma Programme from academic year 2021-2022. Hence if the students in first year (first and second semesters) write answers in Marathi or bilingual language (English +Marathi), the Examiner shall consider the same and assess the answer based on matching of concepts with model answer.

Q. No.	Sub Q. N.	Answer	Marking Scheme
Q.1		<b>Attempt Any Three of the following</b>	<b>12M</b>
	a) i)	Draw graphical symbols for	
	Ans	1)  2)  	2
	ii)	State minimum dimension required for the following in residential building:-	
	Ans	1) Rise – 120mm to 150mm 2) Tread-250 mm to 300mm	2
	b) i)	Draw neat sketches for the following lines	
	Ans	1)  2) 	2
	ii)	Mention the standard sizes of following papers	
	Ans	i) A4- 210 x 297 mm ii) A3-297 x 420 mm	2
	c)	State different types of data drawings for a load bearing residential buildings	
	Ans	Architectural drawings, structural, electrical, plumbing and finishing drawings	4
	d)	State the importance of site plan & foundation plan in submission drawings	
	Ans	<b>Importance of Site plan –</b> 1) It gives idea of site i.e. plot size and size or shape of proposed building. 2) It is helpful to calculate plot area and plinth area. 3) It gives details of side margins. 4) It shows adjacent road and road width. 5) With north direction, plot orientation can be decided. 6) It gives idea about water & drainage line. 7) It shows adjacent plots, survey number, plot number, nearby permanent Structure like temple, etc. <b>Foundation plan</b> a) It shows excavation that is carried out for laying foundation of building. b) According to foundation plan, line out is given on the site by marking lines with white	1 M for each (Any 4)



**SUMMER – 2022 EXAMINATION**

**Subject Name: BPD**

**Model Answer**

**Subject Code:22405**

		<p>lime and according to that pits are dug</p> <p>c) Diagonal measurements are given on foundation plan for checking accuracy.</p> <p>d) Foundation plan shows the top view or layout of footings or foundation walls required to support the structure, showing their area and location by distance Between center lines and by distance from reference lines or boundary lines.</p> <p>e) Foundation plan for load bearing and framed structure is different.</p>																			
	e)	Define the terms: -																			
	Ans	<p><b>1) Vanishing Point:</b> - The imaginary point where all rays vanish are called vanishing point.</p> <p><b>2) Centre of vision:</b> - Vertical sight lines and horizontal sight lines are always at right angles to each other and point where they cross is the centre of vision.</p>	2  2																		
Q.2	a)	Draw a line plan of school building (up to VII th std) for a single division of 40 students. Show different units with their sizes and amenities in school. (min three - play ground, drinking water, washroom	10																		
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>1</td><td>OFFICE</td><td>4.5X4 M</td></tr> <tr><td>2</td><td>STAFF ROOM (SR)</td><td>4.5X4 M</td></tr> <tr><td>3</td><td>CLASS ROOM ( CR)</td><td>4.5X4 M</td></tr> <tr><td>4</td><td>BOYS WASHROOM (WR)</td><td>4.5X4 M</td></tr> <tr><td>5</td><td>GIRLS WASHROOM (WR)</td><td>5X4.5 M</td></tr> <tr><td>6</td><td>WATER COOLER</td><td>1.5X1.5 M</td></tr> </table>	1	OFFICE	4.5X4 M	2	STAFF ROOM (SR)	4.5X4 M	3	CLASS ROOM ( CR)	4.5X4 M	4	BOYS WASHROOM (WR)	4.5X4 M	5	GIRLS WASHROOM (WR)	5X4.5 M	6	WATER COOLER	1.5X1.5 M	<p style="text-align: center;">Marks distribution</p> <p>Office -1M</p> <p>SR- 01M,</p> <p>CR (7) -02 M,</p> <p>WR (B)-1 M,</p> <p>WR (G)-1 M,</p> <p>Water Cooler- 1M,</p> <p>Play Ground- 1 M</p> <p>Washroom- 1 M,</p> <p>Neatness-1 M. (Check Appropriate dimensions)</p>
1	OFFICE	4.5X4 M																			
2	STAFF ROOM (SR)	4.5X4 M																			
3	CLASS ROOM ( CR)	4.5X4 M																			
4	BOYS WASHROOM (WR)	4.5X4 M																			
5	GIRLS WASHROOM (WR)	5X4.5 M																			
6	WATER COOLER	1.5X1.5 M																			



SUMMER – 2022 EXAMINATION

Subject Name: BPD

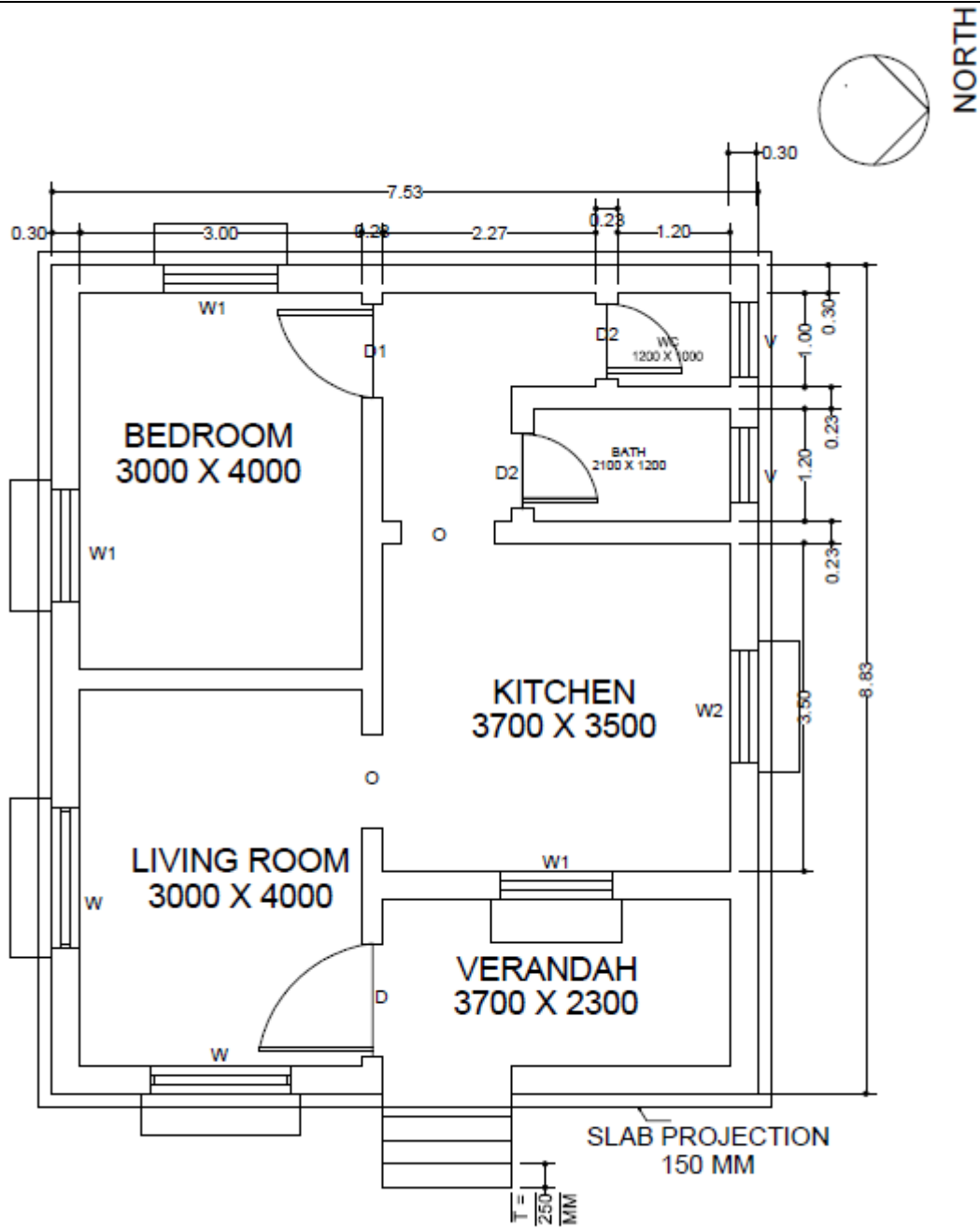
Model Answer

Subject Code:22405

Q. No.	Sub Q. N.	Answer	Marking Scheme
Q. 3		<b>Attempt Any Three of the following</b>	<b>12M</b>
		<p>Fig. - 1 shows a line plan of load bearing residential building. Draw developed plan with suitable scale. Show all dimensions and table the parts.</p> <p>Data:</p> <ol style="list-style-type: none"><li>1) Plinth height 0.75 m.</li><li>2) Assume Chajjas projection 450 mm.</li><li>3) Wall thickness 300 mm for external and 230 mm for internal walls.</li><li>4) Assume suitable data if required</li></ol> <p>Fig.-1</p>	



Ans.



12 M

DEVELOPED PLAN (SCALE 1:100)

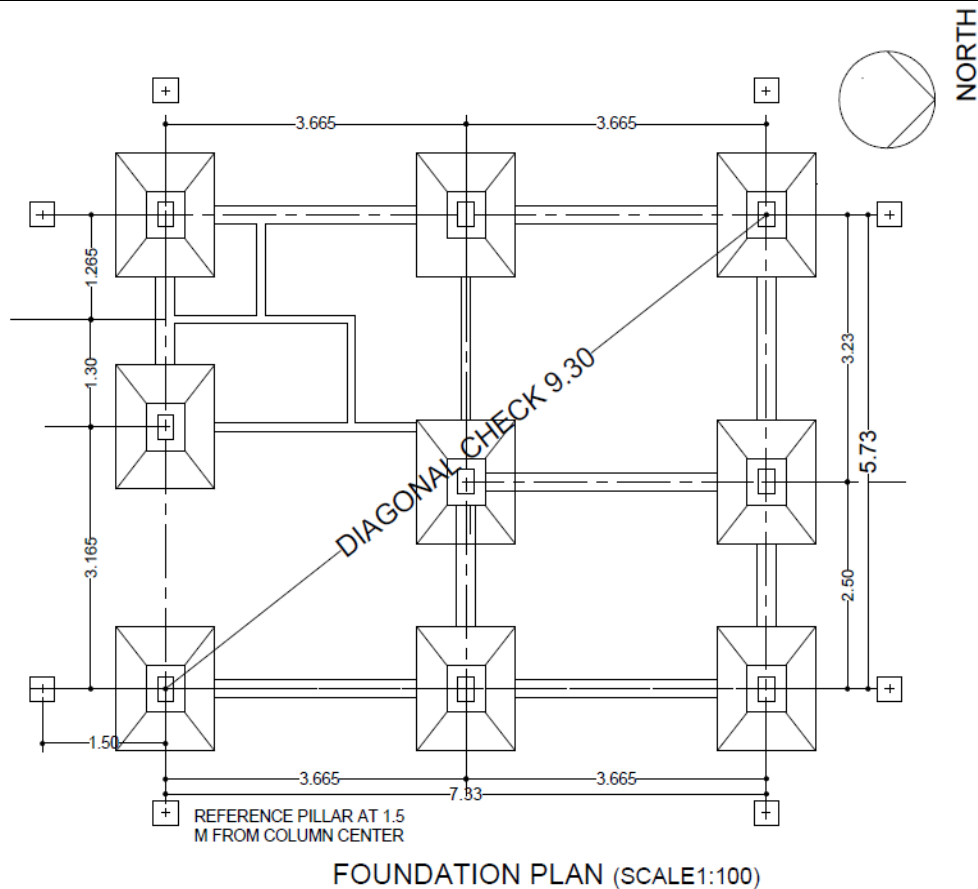
*\*(Note- for Wall thickness - 03 , Position of Window & Door- 03, Labeling and Dimension- 03, Neatness and Scale - 02, North - 01)*



Q. No.	Sub Q. N.	Answer	Marking Scheme
Q. 4		<b>Attempt Any TWO of the following</b>	<b>12M</b>
	a)	<p>Draw foundation plan for a framed structure as shown in fig.-2. Show all dimensions.</p> <p>Data:</p> <ul style="list-style-type: none"><li>i) Wall thickness 230 mm external &amp; 100 mm internal</li><li>ii) Size of column 230 mm x 300 mm</li><li>iii) Size of column footing 1200 mm x 1500 mm</li><li>iv) Size of reference pillar (R.P.) 300 x 300 mm</li><li>v) Distance of R.P. 1.5 m from column center.</li></ul> <p style="text-align: center;"><b>Fig.-2</b></p>	



Ans.



(ALL DIMENSIONS ARE IN M)

*\*(Note- for Correct Centre lines- 02 marks, foundation width- 01 marks, All Dimensions and labeling - 02 marks, Diagonal Check - 01 Marks,)\**

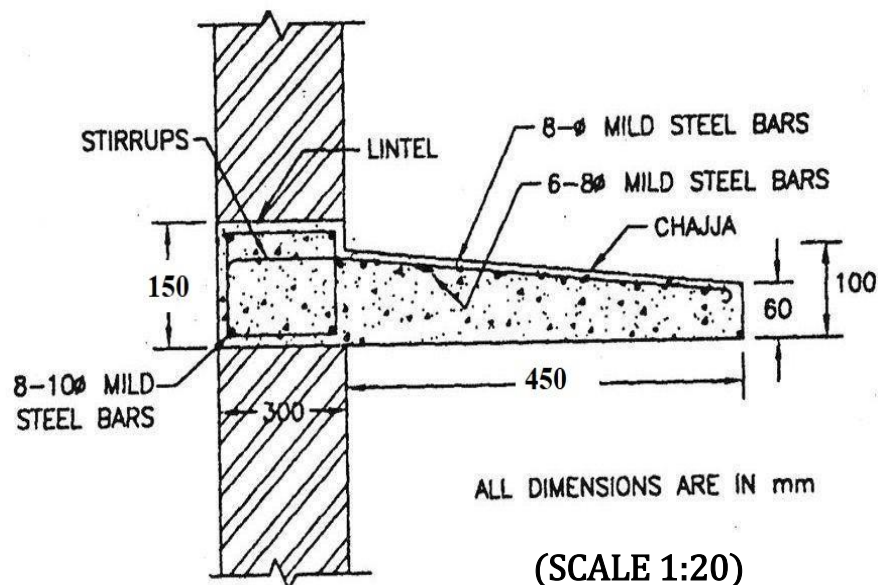
6 M

b)

Draw a neat sketch showing RCC components of lintel with chajja projection of 450 mm. Use 1:20 scale.

Ans.

RCC LINTEL WITH CHAJJA:



*\*(Note - for neat Section - 03 Marks, for labeling - 02 Marks, for*

6 M



		<i>dimensioning and scale - 01 Mark)</i>		
	c)	Draw detailed plan and section of R.C.C. column footing with following data : (i) Size of footing 1200 mm x 1200 mm (ii) Size of column 230 mm x 300 mm		
Ans.				6 M
		<p>(SCALE 1:100) (*Note-for neat and suitable plan -2 marks with scale 1:100 or suitable Section -3 marks ,dimensioning and labeling-1 marks)</p>		



SUMMER – 2022 EXAMINATION

Subject Name: BPD

Model Answer

Subject Code:22405

Q. No.	Sub Q. N.	Answer	Marking Scheme																																																												
Q.5		<b>Attempt Any Two of the following</b>	<b>12M</b>																																																												
	a)	<b>Define:</b> (i) <b>Carpet Area</b> (ii) <b>Built up Area</b> (iii) <b>Plinth Area</b>	<b>06</b>																																																												
	Ans	(i) <b>Carpet area</b> - This is the floor area of the usable rooms at any floor OR the area where carpet can be laid. (ii) <b>Built up area</b> -It is the area covered by all floors of the building. It covers everything under roof but excludes balconies, staircases, etc. It includes floor area of all rooms plus wall thickness. (iii) <b>Plinth area</b> - The area of the building including area of all units with wall thickness at plinth level is called as plinth area OR This is built up covered area measured at the floor level of the basement or any storey.	<b>02</b> <b>02</b> <b>02</b>																																																												
	b)	<b>List the drawings and documents to be submitted for getting approval from Sanctioning Authority</b>	<b>06</b>																																																												
	Ans	<b>The various drawings to be submitted for getting approval from Sanctioning Authority are:</b> 1) Site Plan: Along with block plan showing plinth outline and area statement 2) Ground floor plan, first floor plan, plans of higher floors. Basement floor plan, terrace plan and car park plan. 3) Elevation 4) Section passing through staircase, W.C., bath etc giving details upto foundation. 5) Schedule of doors, windows and grill work. 6) Schedule giving notes for type of construction. Foundation work, R.C.C. work etc. <b>Along with the plan, the following documents must be submitted:</b> 1) Notice to execute the proposed work in the standard form. 2) Undertaking from the architect in the standard form. 3) Extract from property register stating the details regarding the owner and land. 4) Plan from city survey office showing boundaries of the plot and adjoining survey numbers. 5) Certificate regarding to area of plot given by a corporation or town planning department.	<b>1 M for each (Any six)</b>																																																												
	c)	<b>Prepare schedule of opening and area statement for a building shown in fig-1 of Q. no. 3.</b>	<b>06</b>																																																												
	Ans	<table border="1"> <thead> <tr> <th colspan="6">Schedule of Opening</th> </tr> <tr> <th>Sr. No.</th> <th>Item</th> <th>Symbol</th> <th>No.</th> <th>Size (mm)</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Door</td> <td>D</td> <td>1</td> <td>1200 x 2100</td> <td>Paneled Door with T. W</td> </tr> <tr> <td>2</td> <td>Door</td> <td>D1</td> <td>1</td> <td>900 x 2100</td> <td>Fully paneled in T.W. single shutter</td> </tr> <tr> <td>3</td> <td>Door</td> <td>D2</td> <td>2</td> <td>700 x 2100</td> <td>Darth paneled single shutter</td> </tr> <tr> <td>4</td> <td>Window</td> <td>W</td> <td>2</td> <td>1500 x 1500</td> <td>Fully glazed window</td> </tr> <tr> <td>5</td> <td>Window</td> <td>W1</td> <td>3</td> <td>1200 x 1500</td> <td>Fully glazed window</td> </tr> <tr> <td>6</td> <td>Kitchen Window</td> <td>W2</td> <td>1</td> <td>1200 x 1200</td> <td>Fully glazed window</td> </tr> <tr> <td>7</td> <td>Ventilator</td> <td>V</td> <td>2</td> <td>800 x 800</td> <td>Pivoted at Centre horizontally</td> </tr> <tr> <td>8</td> <td>Opening</td> <td>O</td> <td>2</td> <td>900 x 2100</td> <td>Opening</td> </tr> </tbody> </table>	Schedule of Opening						Sr. No.	Item	Symbol	No.	Size (mm)	Description	1	Door	D	1	1200 x 2100	Paneled Door with T. W	2	Door	D1	1	900 x 2100	Fully paneled in T.W. single shutter	3	Door	D2	2	700 x 2100	Darth paneled single shutter	4	Window	W	2	1500 x 1500	Fully glazed window	5	Window	W1	3	1200 x 1500	Fully glazed window	6	Kitchen Window	W2	1	1200 x 1200	Fully glazed window	7	Ventilator	V	2	800 x 800	Pivoted at Centre horizontally	8	Opening	O	2	900 x 2100	Opening	<b>06</b>
Schedule of Opening																																																															
Sr. No.	Item	Symbol	No.	Size (mm)	Description																																																										
1	Door	D	1	1200 x 2100	Paneled Door with T. W																																																										
2	Door	D1	1	900 x 2100	Fully paneled in T.W. single shutter																																																										
3	Door	D2	2	700 x 2100	Darth paneled single shutter																																																										
4	Window	W	2	1500 x 1500	Fully glazed window																																																										
5	Window	W1	3	1200 x 1500	Fully glazed window																																																										
6	Kitchen Window	W2	1	1200 x 1200	Fully glazed window																																																										
7	Ventilator	V	2	800 x 800	Pivoted at Centre horizontally																																																										
8	Opening	O	2	900 x 2100	Opening																																																										





SUMMER – 2022 EXAMINATION

Subject Name: BPD

Model Answer

Subject Code:22405

Q. No.	Sub Q. N.	Answer	Marking Scheme
Q.6		Attempt Any One of the following	12M
	a)	Draw to a suitable scale two points perspective drawing for steps shown in fig.-3. Assume eye level at 1.5 m. above ground level and station point at 3.0 m from picture plane along Central Visual Ray. Retain all construction lines. Assume suitable data if required.	12
Ans		<p>1- Marks for Plan, 1- Marks for elevation, 1- Marks for construction line, 1-Mark for eye level, 8- Marks for correct object</p>	



b)	<p>Draw a plan and section of a single flight of a R.C.C. stair case from following data: Number Risers - 10 of 150 mm height Number of Trades - 09 of 300 mm width Width of staircase is 1200 mm Landing at top is 1200 x 1200 mm.</p>	12
Ans	<p><b>SECTION AB</b></p> <p><b>PLAN</b></p>	08  04