L-4/T-1/ARCH **Date : 07/12/2014**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-4/T-1 B. Arch. Examinations 2013-2014

Sub : **CE 423/465** (Structure V: Reinforced Concrete Design)

Full Marks: 140 Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

SECTION – A

There are **FOUR** questions in this section. Answer any **THREE**.

1. (a) Why Reinforced Concrete is called a universal building material? **(2)**

   (b) Discuss the fundamental assumptions on which the mechanics of RCC is based. **(4)**

   (c) A rectangular beam must carry the load as shown in Fig. 1 in addition to its self-weight. Design the beam for flexure, using $f'_c = 3$ ksi, f_s = 20 ksi and n = 8. Use WSD method. **(17⅓)**

2. (a) Discuss the behavior of a singly reinforced rectangular beam with distribution of stresses and strains in concrete and steel for the following cases: **(6)**

   (i) At low loads when section is uncracked.

   (ii) When load is increased and section becomes cracked.

   (iii) When load is further increased and stress strain behavior becomes nonlinear.

   (b) Calculate the moment capacity of the beam shown in Fig. 2. Use WSD method. Given: $f'_c = 3$ ksi, f_s = 20 ksi and n = 8. **(17⅓)**

3. (a) Draw the stress-strain diagram of steel and concrete, and explain briefly. **(4)**

   (b) Why shear reinforcements are provided in beam? **(2)**

   (c) A floor slab 4 in thick is supported by reinforced-concrete beams, 12 ft center to center, which is together with the slab, act as T beams. The beams are simply supported, and their span is 18 ft. The slab supports a live load of 100 psf. The cross section of each beam below the slab is 10 in × 18 in. Determine the area of steel if $f'_c = 3$ ksi and f_s = 20 ksi, with n = 8. Use WSD method. **(17⅓)**

4. (a) A simply supported rectangular beam 10 in wide, having an effective depth of 18 in, carries a total working load of 5 kips per foot on an 18 ft clear span. Using vertical U stirrups with fv = 20 ksi, design the web reinforcement. Use WSD method. Given: $f'_c = 3$ ksi. **(15⅓)**

   (b) Calculate the moment capacity of the beam shown in Fig. 3. Use WSD method. Given: $f'_c = 3$ ksi, f_s = 20 ksi and n = 8. **(8)**

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SECTION – B

There are **FOUR** questions in this section. Answer any **THREE**.

5. (a) Prove that a slab acts as one way slab if the longer span of the slab supported on both directions is greater than two times the shorter span. **(3)**

(b) Using WSD method, design the slab panel (S1) as shown in Fig. 4. The slab carries a uniform service live load of 80 psf and a service dead load of 40 psf in addition to the slab self-weight. Given: $f_c' = 4$ ksi, $f_s = 24$ ksi and n = 9. **(20 ⅓)**

6. (a) Why is special reinforcement provided at exterior corners of beam supported two way slab? **(3)**

(b) Using WSD method, design the slab panel (S2) shown in Fig. 5. The slab carries a uniform service live load of 80 psf and a service dead load of 40 psf in addition to the slab self-weight. Given: $f_c' = 4$ ksi, $f_s = 24$ ksi and n = 9. **(20 ⅓)**

7. (a) Why drop panels and column capitals are used in flat slab floor system? **(3)**

(b) Using the Direct Design Method, design the typical interior flat-plate panel shown in Fig. 6. The slab carries a uniform service live load of 80 psf and a service dead load of 40 psf in addition to the slab self-weight. Given: $f_c' = 4$ ksi and $f_y = 60$ ksi. **(20 ⅓)**

8. Using the Direct Design Method, design the waffle floor system shown in Fig. 7. The floor system carries a uniform service live load of 80 psf and a service dead load of 40 psf in addition to its self-weight. Given: $f_c' = 4$ ksi and $f_y = 60$ ksi. **(23 ⅓)**

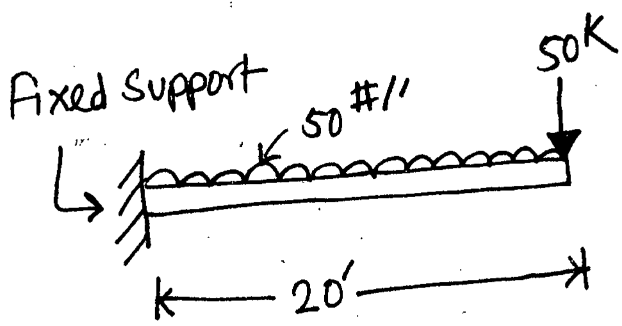


Fig. 1

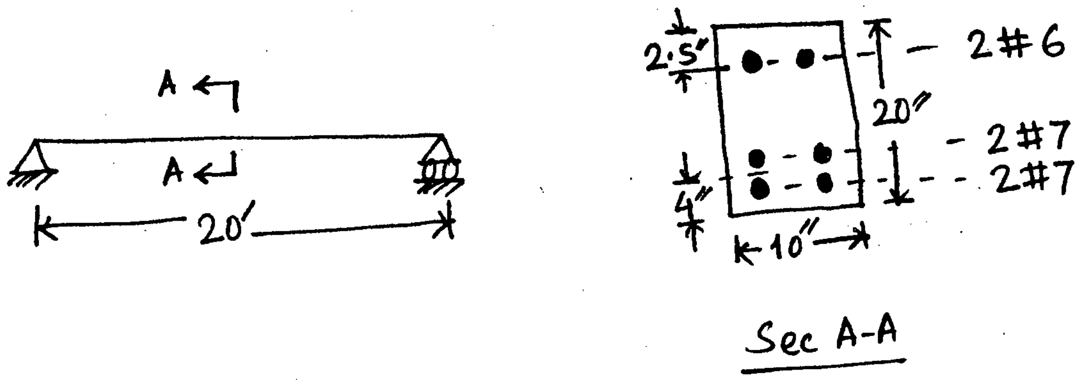


Fig. 2

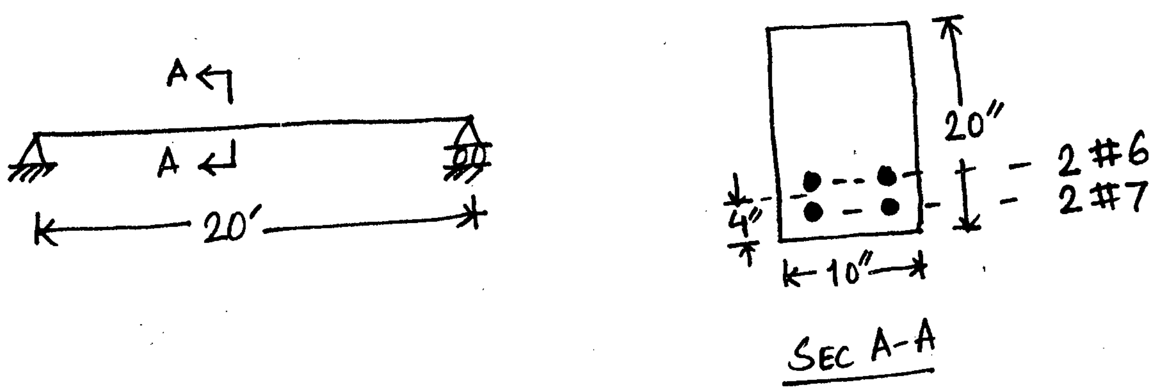
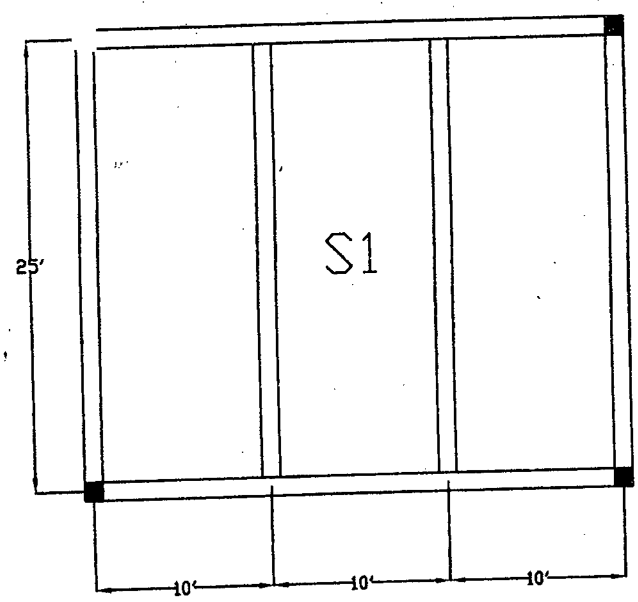


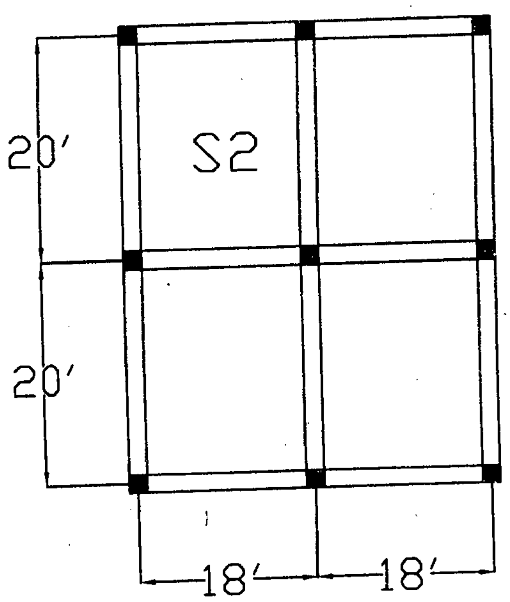
Fig. 3



beam size
12"X24"

column size
12"X12"

Fig. 04



beam size
12"X24"

column size
12"X12"

Fig. 05

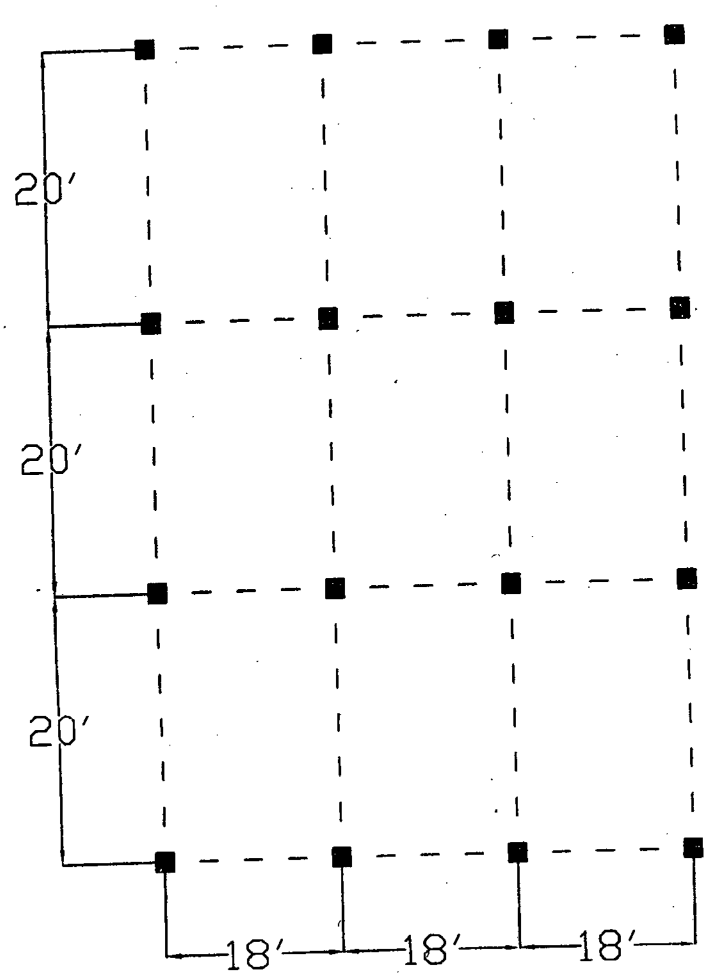
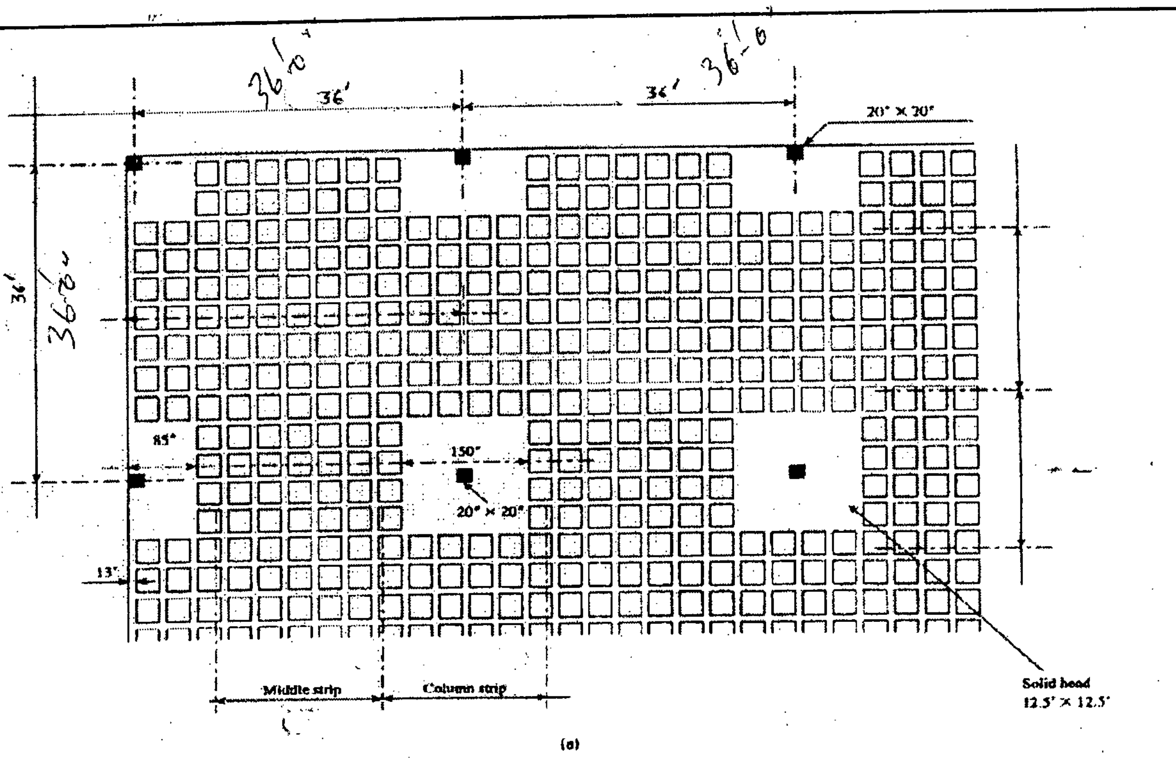


Fig. 06



(a) Plan of the waffle slab, (b) cross section, (c) pan and rib dimensions, and (d) spacing and dimensions of solid heads (Example 17.12).

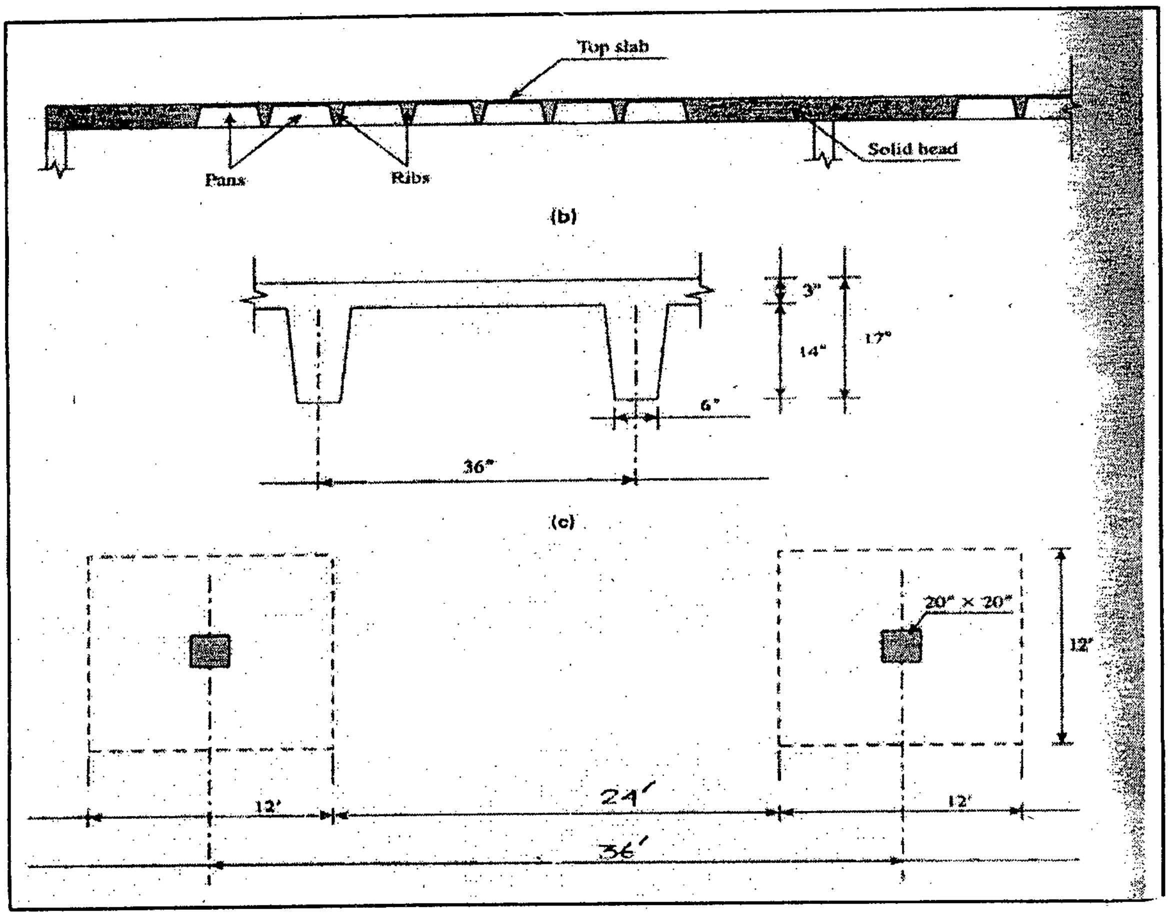
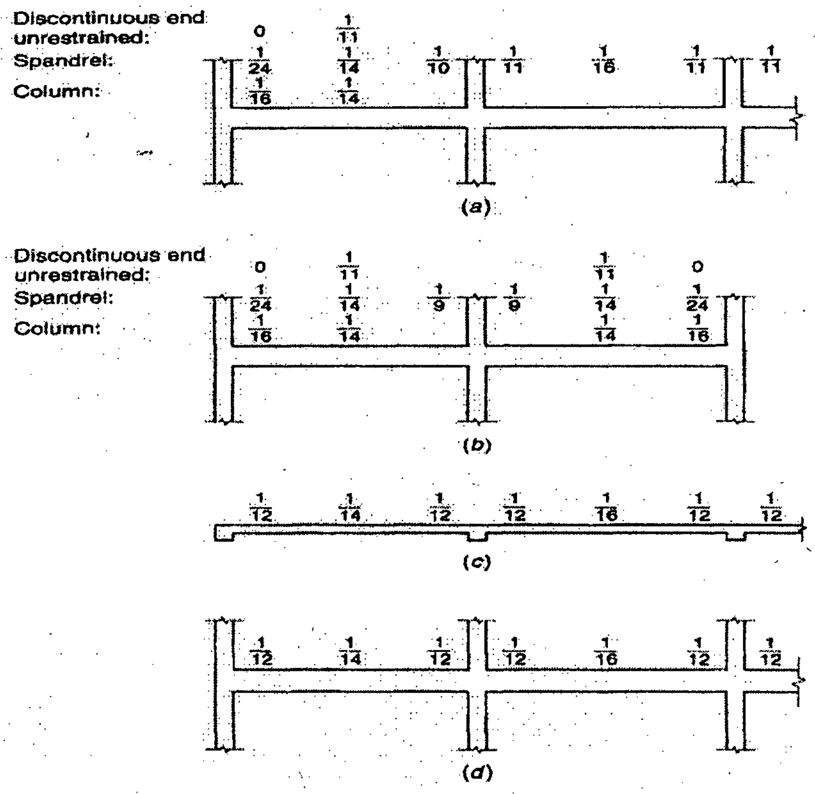


Fig. 07

ummary of ACI moment coefficients: (*a*) beams with more than two spans; (*b*) beams with two spans only; (*c*) slabs with spans not exceeding 10 ft; (*d*) beams in which the sum of column stiffnesses exceeds 8 times the sum of beam stiffnesses at each end of the span.



Minimum Thickness of Slabs Without Interior Beams

Yield Stress f_y psi (1)[a]	Without Drop Panels[b]: Exterior Panels: Without Edge Beams	Without Drop Panels[b]: Exterior Panels: With Edge Beams	Without Drop Panels[b]: Interior Panels	With Drop Panels[b]: Exterior Panels: Without Edge Beams	With Drop Panels[b]: Exterior Panels: With Edge Beams[c]	With Drop Panels[b]: Interior Panels
40,000	$\frac{l_n}{33}$	$\frac{l_n}{36}$	$\frac{l_n}{36}$	$\frac{l_n}{36}$	$\frac{l_n}{40}$	$\frac{l_n}{40}$
60,000	$\frac{l_n}{30}$	$\frac{l_n}{33}$	$\frac{l_n}{33}$	$\frac{l_n}{30}$	$\frac{l_n}{36}$	$\frac{l_n}{36}$

[a]For values of reinforcement, yield stress between 40,000 and 60,000 psi minimum thickness shall be obtained by linear interpolation.
[b]Drop panel is defined in ACI Sections 13.3.7.1 and 13.3.7.2.
[c]Slabs with beams between columns along exterior edges. The value of α_f for the edge beam shall be not less than 0.8.

Table Percentage of Moments in Two-Way Interior Slabs Without Beams ($\alpha_1 = 0$)

Total Design Moment $= M_o = (w_u l_2)\left(\frac{l_{n_1}^2}{8}\right)\frac{n!}{r!(n-r)!}$

	Negative Moment	Positive Moment
Longitudinal moments in one panel	$-0.65M_o$	$\pm0.35M_o$
Column strip	$0.75(-0.65M_o) = -0.49M_o$	$0.60(0.35M_o) = 0.21M_o$
Middle strip	$0.25(-0.65M_o) = 0.16M_o$	$0.40(0.35M_o) = 0.14M_o$

Coefficients for negative moments in slabs[a]

$M_{a,neg} = C_{a,neg} w l_a^2$ where w = total uniform dead plus live load
$M_{b,neg} = C_{b,neg} w l_b^2$

Ratio $m = \frac{l_a}{l_b}$		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9
1.00	$C_{a,neg}$		0.045		0.050	0.075	0.071		0.033	0.061
	$C_{b,neg}$		0.045	0.076	0.050			0.071	0.061	0.033
0.95	$C_{a,neg}$		0.050		0.055	0.079	0.075		0.038	0.065
	$C_{b,neg}$		0.041	0.072	0.045			0.067	0.056	0.029
0.90	$C_{a,neg}$		0.055		0.060	0.080	0.079		0.043	0.068
	$C_{b,neg}$		0.037	0.070	0.040			0.062	0.052	0.025
0.85	$C_{a,neg}$		0.060		0.066	0.082	0.083		0.049	0.072
	$C_{b,neg}$		0.031	0.065	0.034			0.057	0.046	0.021
0.80	$C_{a,neg}$		0.065		0.071	0.083	0.086		0.055	0.075
	$C_{b,neg}$		0.027	0.061	0.029			0.051	0.041	0.017
0.75	$C_{a,neg}$		0.069		0.076	0.085	0.088		0.061	0.078
	$C_{b,neg}$		0.022	0.056	0.024			0.044	0.036	0.014
0.70	$C_{a,neg}$		0.074		0.081	0.086	0.091		0.068	0.081
	$C_{b,neg}$		0.017	0.050	0.019			0.038	0.029	0.011
0.65	$C_{a,neg}$		0.077		0.085	0.087	0.093		0.074	0.083
	$C_{b,neg}$		0.014	0.043	0.015			0.031	0.024	0.008
0.60	$C_{a,neg}$		0.081		0.089	0.088	0.095		0.080	0.085
	$C_{b,neg}$		0.010	0.035	0.011			0.024	0.018	0.006
0.55	$C_{a,neg}$		0.084		0.092	0.089	0.096		0.085	0.086
	$C_{b,neg}$		0.007	0.028	0.008			0.019	0.014	0.005
0.50	$C_{a,neg}$		0.086		0.094	0.090	0.097		0.089	0.088
	$C_{b,neg}$		0.006	0.022	0.006			0.014	0.010	0.003

[a] A crosshatched edge indicates that the slab continues across, or is fixed at, the support; an unmarked edge indicates ...rt at which torsional resistance is negligible.

TABLE 12.4

Coefficients for dead load positive moments in slabs[a]

$M_{a,pos,dl} = C_{a,dl} w l_a^2$ where w = total uniform dead load
$M_{b,pos,dl} = C_{b,dl} w l_b^2$

Ratio $m = \frac{l_a}{l_b}$		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9
1.00	$C_{a,dl}$	0.036	0.018	0.018	0.027	0.027	0.033	0.027	0.020	0.023
	$C_{b,dl}$	0.036	0.018	0.027	0.027	0.018	0.027	0.033	0.023	0.020
0.95	$C_{a,dl}$	0.040	0.020	0.021	0.030	0.028	0.036	0.031	0.022	0.024
	$C_{b,dl}$	0.033	0.016	0.025	0.024	0.015	0.024	0.031	0.021	0.017
0.90	$C_{a,dl}$	0.045	0.022	0.025	0.033	0.029	0.039	0.035	0.025	0.026
	$C_{b,dl}$	0.029	0.014	0.024	0.022	0.013	0.021	0.028	0.019	0.015
0.85	$C_{a,dl}$	0.050	0.024	0.029	0.036	0.031	0.042	0.040	0.029	0.028
	$C_{b,dl}$	0.026	0.012	0.022	0.019	0.011	0.017	0.025	0.017	0.013
0.80	$C_{a,dl}$	0.056	0.026	0.034	0.039	0.032	0.045	0.045	0.032	0.029
	$C_{b,dl}$	0.023	0.011	0.020	0.016	0.009	0.015	0.022	0.015	0.010
0.75	$C_{a,dl}$	0.061	0.028	0.040	0.043	0.033	0.048	0.051	0.036	0.031
	$C_{b,dl}$	0.019	0.009	0.018	0.013	0.007	0.012	0.020	0.013	0.007
0.70	$C_{a,dl}$	0.068	0.030	0.046	0.046	0.035	0.051	0.058	0.040	0.033
	$C_{b,dl}$	0.016	0.007	0.016	0.011	0.005	0.009	0.017	0.011	0.006
0.65	$C_{a,dl}$	0.074	0.032	0.054	0.050	0.036	0.054	0.065	0.044	0.034
	$C_{b,dl}$	0.013	0.006	0.014	0.009	0.004	0.007	0.014	0.009	0.005
0.60	$C_{a,dl}$	0.081	0.034	0.062	0.053	0.037	0.056	0.073	0.048	0.036
	$C_{b,dl}$	0.010	0.004	0.011	0.007	0.003	0.006	0.012	0.007	0.004
0.55	$C_{a,dl}$	0.088	0.035	0.071	0.056	0.038	0.058	0.081	0.052	0.037
	$C_{b,dl}$	0.008	0.003	0.009	0.005	0.002	0.004	0.009	0.005	0.003
0.50	$C_{a,dl}$	0.095	0.037	0.080	0.059	0.039	0.061	0.089	0.056	0.038
	$C_{b,dl}$	0.006	0.002	0.007	0.004	0.001	0.003	0.007	0.004	0.002

[a] A crosshatched edge indicates that the slab continues across, or is fixed at, the support; an unmarked edge indicates a support at which torsional resistance is negligible.

P-7

Coefficients for live load positive moments in slabs[a]

$M_{a,pos,ll} = C_{a,ll} w l_a^2$ where w = total uniform live load
$M_{b,pos,ll} = C_{b,ll} w l_b^2$

Ratio $m = \frac{l_a}{l_b}$		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9
1.00	$C_{a,ll}$	0.036	0.027	0.027	0.032	0.032	0.035	0.032	0.028	0.030
	$C_{b,ll}$	0.036	0.027	0.032	0.032	0.027	0.032	0.035	0.030	0.028
0.95	$C_{a,ll}$	0.040	0.030	0.031	0.035	0.034	0.038	0.036	0.031	0.032
	$C_{b,ll}$	0.033	0.025	0.029	0.029	0.024	0.029	0.032	0.027	0.025
0.90	$C_{a,ll}$	0.045	0.034	0.035	0.039	0.037	0.042	0.040	0.035	0.036
	$C_{b,ll}$	0.029	0.022	0.027	0.026	0.021	0.025	0.029	0.024	0.022
0.85	$C_{a,ll}$	0.050	0.037	0.040	0.043	0.041	0.046	0.045	0.040	0.039
	$C_{b,ll}$	0.026	0.019	0.024	0.023	0.019	0.022	0.026	0.022	0.020
0.80	$C_{a,ll}$	0.056	0.041	0.045	0.048	0.044	0.051	0.051	0.044	0.042
	$C_{b,ll}$	0.023	0.017	0.022	0.020	0.016	0.019	0.023	0.019	0.017
0.75	$C_{a,ll}$	0.061	0.045	0.051	0.052	0.047	0.055	0.056	0.049	0.046
	$C_{b,ll}$	0.019	0.014	0.019	0.016	0.013	0.016	0.020	0.016	0.013
0.70	$C_{a,ll}$	0.068	0.049	0.057	0.057	0.051	0.060	0.063	0.054	0.050
	$C_{b,ll}$	0.016	0.012	0.016	0.014	0.011	0.013	0.017	0.014	0.011
0.65	$C_{a,ll}$	0.074	0.053	0.064	0.062	0.055	0.064	0.070	0.059	0.054
	$C_{b,ll}$	0.013	0.010	0.014	0.011	0.009	0.010	0.014	0.011	0.009
0.60	$C_{a,ll}$	0.081	0.058	0.071	0.067	0.059	0.068	0.077	0.065	0.059
	$C_{b,ll}$	0.010	0.007	0.011	0.009	0.007	0.008	0.011	0.009	0.007
0.55	$C_{a,ll}$	0.088	0.062	0.080	0.072	0.063	0.073	0.085	0.070	0.063
	$C_{b,ll}$	0.008	0.006	0.009	0.007	0.005	0.006	0.009	0.007	0.006
0.50	$C_{a,ll}$	0.095	0.066	0.088	0.077	0.067	0.078	0.092	0.076	0.067
	$C_{b,ll}$	0.006	0.004	0.007	0.005	0.004	0.005	0.007	0.005	0.004

[a] A crosshatched edge indicates that the slab continues across, or is fixed at, the support; an unmarked edge indicates a support at which torsional resistance is negligible.

Ratio of load W in l_a and l_b directions for shear in slab and load on supports[a]

Ratio $m = \frac{l_a}{l_b}$		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9
1.00	W_a	0.50	0.50	0.17	0.50	0.83	0.71	0.29	0.33	0.67
	W_b	0.50	0.50	0.83	0.50	0.17	0.29	0.71	0.67	0.33
0.95	W_a	0.55	0.55	0.20	0.55	0.86	0.75	0.33	0.38	0.71
	W_b	0.45	0.45	0.80	0.45	0.14	0.25	0.67	0.62	0.29
0.90	W_a	0.60	0.60	0.23	0.60	0.88	0.79	0.38	0.43	0.75
	W_b	0.40	0.40	0.77	0.40	0.12	0.21	0.62	0.57	0.25
0.85	W_a	0.66	0.66	0.28	0.66	0.90	0.83	0.43	0.49	0.79
	W_b	0.34	0.34	0.72	0.34	0.10	0.17	0.57	0.51	0.21
0.80	W_a	0.71	0.71	0.33	0.71	0.92	0.86	0.49	0.55	0.83
	W_b	0.29	0.29	0.67	0.29	0.08	0.14	0.51	0.45	0.17
0.75	W_a	0.76	0.76	0.39	0.76	0.94	0.88	0.56	0.61	0.86
	W_b	0.24	0.24	0.61	0.24	0.06	0.12	0.44	0.39	0.14
0.70	W_a	0.81	0.81	0.45	0.81	0.95	0.91	0.62	0.68	0.89
	W_b	0.19	0.19	0.55	0.19	0.05	0.09	0.38	0.32	0.11
0.65	W_a	0.85	0.85	0.53	0.85	0.96	0.93	0.69	0.74	0.92
	W_b	0.15	0.15	0.47	0.15	0.04	0.07	0.31	0.26	0.08
0.60	W_a	0.89	0.89	0.61	0.89	0.97	0.95	0.76	0.80	0.94
	W_b	0.11	0.11	0.39	0.11	0.03	0.05	0.24	0.20	0.06
0.55	W_a	0.92	0.92	0.69	0.92	0.98	0.96	0.81	0.85	0.95
	W_b	0.08	0.08	0.31	0.08	0.02	0.04	0.19	0.15	0.05
0.50	W_a	0.94	0.94	0.76	0.94	0.99	0.97	0.86	0.89	0.97
	W_b	0.06	0.06	0.24	0.06	0.01	0.03	0.14	0.11	0.03

[a] A crosshatched edge indicates that the slab continues across, or is fixed at, the support; an unmarked edge indicates a support at which torsional resistance is negligible.

A.5a

ρ	f_y = 40,000 psi				f_y = 60,000 psi			
	f'_c, psi				f'_c, psi			
	3000	4000	5000	6000	3000	4000	5000	6000
0.0005	20	20	20	20	30	30	30	30
0.0010	40	40	40	40	59	59	60	60
0.0015	59	59	60	60	88	89	89	89
0.0020	79	79	79	79	117	118	118	119
0.0025	98	99	99	99	146	147	147	148
0.0030	117	118	118	119	174	175	176	177
0.0035	136	137	138	138	201	204	205	206
0.0040	155	156	157	157	229	232	233	234
0.0045	174	175	176	177	256	259	261	263
0.0050	192	194	195	196	282	287	289	291
0.0055	211	213	214	215	309	314	317	319
0.0060	229	232	233	234	335	341	345	347
0.0065	247	250	252	253	360	368	372	375
0.0070	265	268	271	272	385	394	399	403
0.0075	282	287	289	291	410	420	426	430
0.0080	300	305	308	310	435	446	453	457
0.0085	317	323	326	329	459	472	479	485
0.0090	335	341	345	347	483	497	506	511
0.0095	352	359	363	366	506	522	532	538
0.0100	369	376	381	384	529	547	558	565
0.0105	385	394	399	403	552	572	583	591
0.0110	402	412	417	421	575	596	609	617
0.0115	419	429	435	439	597	620	634	643
0.0120	435	446	453	457	618	644	659	669
0.0125	451	463	471	476	640	667	684	695
0.0130	467	480	488	494	661	691	708	720
0.0135	483	497	506	511	681	714	733	746
0.0140	499	514	523	529	702	736	757	771
0.0145	514	531	540	547	722	759	781	796
0.0150	529	547	558	565	741	781	805	821
0.0155	545	563	575	582	760	803	828	845
0.0160	560	580	592	600		825	852	870
0.0165	575	596	609	617		846	875	894
0.0170	589	612	626	635		867	898	918
0.0175	604	628	642	652		888	920	942
0.0180	618	644	659	669		909	943	966
0.0185	633	660	676	686		929	965	989
0.0190	647	675	692	703		949	987	1013
0.0195	661	691	708	720		969	1009	1036
0.0200	675	706	725	737		988	1031	1059

L-4/T-1/ARCH **Date : 13/12/2014**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-4/T-1 B. Arch. Examinations 2012-2013

Sub : **ARCH 455** (Urban Design-II)

Full Marks: 140 Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

SECTION – A

There are **FOUR** questions in this section. Answer **Q. No. 1** and any **TWO** from the rest.

1. Write short note on any two of the following: **(10×2=20)**
   (a) Lively and Lifeless cities.
   (b) 'Monument' and 'Place' according to Aldo Rossi.

2. (a) Describe 'Defensible Space' according to Oscar Newman. **(10+15=25)**
   (b) What were the problems of Modern cities? How did Jane Jacobs want to achieve city diversity to make interesting, lively and safer cities?

3. (a) What are the main objectives of an Historical Analysis? What are the various tasks to be covered by an Historical Analysis? **(12.5+12.5=25)**
   (b) What methods are followed in "Visual Analysis" for analysis of 2-D and 3-D Public Space and Architectural details?

4. (a) What were the philosophies of Rationalists and Empericists? Discuss with examples. **(10+15=25)**
   (b) Elaborate Camillo Sitte's concepts for picturesque Urban Design.

SECTION – B

There are **FOUR** questions in this section. Answer **Q. No. 5** and any **TWO** from the rest.

5. Write short notes **(10+×2=20)**
   (a) Normative theories of city design.
   (b) 'Permeability' of a city.

6. (a) What are the various methods Data Analysis from an Urban Design Survey? Discuss in detail. **(20)**
   (b) Prepare a matrix of SWOT analysis for an Urban Design Project to be developed in the wetlands of Dhaka. **(5)**

Contd P/2

ARCH 455/ARCH

7. (a) Define 'Legibility' of a town? What are the five elements of legibility according to Lynch? Discuss with examples. **(15)**

   (b) Discuss the different aspects to be surveyed to identity the legibility of a city. **(10)**

8. (a) What are various activities that generate life between buildings? How physical environment influence them? **(10)**

   (b Characterize the medieval and renaissance urban spaces in relation to outdoor activities they used to generate. **(15)**

L-4/T-1/ARCH **Date : 13/12/2014**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-4/T-1 B. Arch. Examinations 2012-2013

Sub : **ARCH 445** (Architectural Conservation)

Full Marks: 140 Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

SECTION – A

There are **FOUR** questions in this section. Answer **Q. No. 4** and any **TWO** from the rest.

1. (a) Define 'Architectural and Urban Conservation'. **(05)**

   (b) What are the objectives of conservation? **(10)**

   (c) List the general guidelines for conservation. **(07)**

2. (a) What do you understand by 'Conservation Ethics'? **(07)**

   (b) Discuss the salient features of the ethics of conservation. **(15)**

3. (a) What are the common threats to conservation? **(07)**

   (b) Differentiate between 'conservation Architect' and 'conservation activist'. **(07)**

   (c) Elaborate on the role of 'Conservation Architects'. **(08)**

4. (a) What are the tools available in Bangladesh that contributes toward 'Architectural and Area Conservation'? **(13)**

   (b) Discuss the state of conservation practice in Bangladesh with specific examples. **(13)**

SECTION – B

There are **FOUR** questions in this section. Answer **Q. No. 5** and any **TWO** from the rest.

5. Write short notes **(5×4=20)**

   (a) Classification of heritage
   (b) Restoration and rehabilitation\
   (c) Reconstruction and prevention of deterioration
   (d) Microbiological causes of decay

Contd P/2

ARCH 445/ARCH

2. (a) What are principal causes of decay in cultural heritage properties. **(6)**

   (b) State the questions that must be posed while analyzing the causes of deterioration in a historic building. **(6)**

   (c) Explain with examples the climatic causes of decay in heritage buildings. **(13)**

7. (a) Why and what to conserve? Discuss. **(10)**

   (b) Briefly describe what are the characteristic features of area conservation. **(15)**

8. (a) Name the international charters on conservation mentioning areas of focus. **(12)**

   (b) Explain the central idea of the 'Viennese Charter' and the 'Washington Charter'. **(13)**

L-4/T-1/ARCH **Date : 05/01/2015**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-4/T-1 B. Arch. Examinations 2012-2013

Sub : **ARCH 441** (Art and Architecture V)

Full Marks: 140 Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

SECTION – A

There are **FOUR** questions in this section. Answer **Q. No. 4** and any **2 (TWO)** from the rest.

1. Describe Villa Savoye with reference to the Five Points in architecture developed by Le Corbusier. **(25)**

2. Describe how Paul Cezanne's struggle to resolve the conflict between pattern and solidity influenced the works of Fauves and Cubists. **(25)**

3. Describe how Abbe Laugier's idea of universal natural architecture, expressed through 'primordial primitive hut' eventually paved the way for the structural classicism of Viollet-le-Due or Henri Labrouste. **(25)**

4. Write short notes on any two. **(20)**
   (a) Promenade architecture.
   (b) Arrangement in Grey and Black.
   (c) Modernism, modernity and modernization.

SECTION – B

There are **FOUR** questions in this section. Answer **Q. No. 8** and any **2 (TWO)** from the rest.

5. Describe Bercelona pavilion to elucidate the famous dictum, "Less is more" by Mies Van Der Rohe. **(25)**

6. Describe Johnson Wax administration building to explain Frank Lloyd Wright's idea about work place as sacremental environment. **(25)**

7. Describe "Crystal Palace" to highlight its significance in the history of architecture. **(25)**

8. Write short notes on any TWO of the followings **(10×2=20)**
   (a) Cenotaph for Issac Newton
   (b) Pre-Raphaelite brotherhood
   (c) Non-objective art.

L-4/T-1/ARCH　　　　　　　　　　　　　　　　　　　Date : 10/01/2015

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-4/T-1 B. ARCH Examinations 2012-2013

Sub : **ARCH 431** (Environment and Design IV : Landscape Design)

Full Marks : 140　　　　　　　　　　Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

SECTION – A

There are **FOUR** questions in this Section. Answer Q. No. 1 and any **TWO** form the rest.

1. (a) Define landscape and landscape ecology. **(6+14+10=30)**
   (b) Discuss the focuses of Landscape ecology.
   (c) Mention 10 (ten) ideas related to modern landscape ecology.

2. (a) Define ecological services. Discuss ecological services offered by Sundarban (Mangrove-forest). **(15+5=20)**
   (b) What are the principles of landscape conservation?

3. Compare the landscape ideologies of "Pre-historic period" with those of "Middle ages". Give examples with necessary sketches. **(20)**

4. Write short notes on: **(10×2=20)**
   (a) Ecological attributes of Sal-forest.
   (b) Alhambra.

SECTION – B

There are **FOUR** questions in this Section. Answer Q. 1 and any **TWO** from the rest.

5. (a) State the important features regarding site and context to be considered during landscape design process. **(15)**
   (b) Mention the steps of landscape design process. **(10)**
   (c) Why does a landscape designer need to know about bio-diversity of a site? Explain. **(5)**

6. (a) What are the basic forms of outdoor activities in urbanscape? **(5)**
   (b) How can a physical environment designer promote physical activity and health in urban context? **(7)**
   (c) Briefly discuss the health effects of viewing landscape. **(8)**

7. (a) What is planting? What are the steps involved in planting? **(14)**
   (b) State the factors that distinguish the planting season. Explain. **(6)**

8. Write short notes on:
   (a) Green roof. **(6)**
   (b) Living wall **(7)**
   (c) Living machine **(7)**