Equation:

$$PVIFA_{i,n} = \sum_{t=1}^{n} \frac{1}{(1+i)^t} = \frac{1 - \frac{1}{(1+i)^n}}{i} = \frac{1}{i} - \frac{1}{i(1+i)^n}$$

Financial Calculator Keys:

| n | i | PV | PMT | FV |

TABLE VALUE

Number of Periods	1%	2%	3%	4%	5%	6%	7%	8%	9%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607
13	12.1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869
14	13.0037	12.1062	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607
16	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126
17	15.5623	14.2919	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436
18	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556
19	17.2260	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285
21	18.8570	17.0112	15.4150	14.0292	12.8212	11.7641	10.8355	10.0168	9.2922
22	19.6604	17.6580	15.9369	14.4511	13.1630	12.0416	11.0612	10.2007	9.4424
23	20.4558	18.2922	16.4436	14.8560	13.4886	12.3034	11.2722	10.3711	9.5802
24	21.2434	18.9139	16.9355	15.2470	13.7986	12.5504	11.4693	10.5288	9.7066
25	22.0232	19.5235	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226
26	22.7952	20.1210	17.8768	15.9828	14.3752	13.0032	11.8258	10.8100	9.9290
27	23.5596	20.7069	18.3270	16.3296	14.6430	13.2105	11.9867	10.9352	10.0266
28	24.3164	21.2813	18.7641	16.6631	14.8981	13.4062	12.1371	11.0511	10.1161
29	25.0658	21.8444	19.1885	16.9837	15.1411	13.5907	12.2777	11.1584	10.1983
30	25.8077	22.3965	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737
35	29.4086	24.9986	21.4872	18.6646	16.3742	14.4982	12.9477	11.6546	10.5668
40	32.8347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574
45	36.0945	29.4902	24.5187	20.7200	17.7741	15.4558	13.6055	12.1084	10.8812
50	39.1961	31.4236	25.7298	21.4822	18.2559	15.7619	13.8007	12.2335	10.9617
55	42.1472	33.1748	26.7744	22.1086	18.6335	15.9905	13.9399	12.3186	11.0140

Number of Periods	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%
1	0.9091	0.8929	0.8772	0.8696	0.8621	0.8475	0.8333	0.8065	0.7813	0.7576
2	1.7355	1.6901	1.6467	1.6257	1.6052	1.5656	1.5278	1.4568	1.3916	1.3315
3	2.4869	2.4018	2.3216	2.2832	2.2459	2.1743	2.1065	1.9813	1.8684	1.7663
4	3.1699	3.0373	2.9137	2.8550	2.7982	2.6901	2.5887	2.4043	2.2410	2.0957
5	3.7908	3.6048	3.4331	3.3522	3.2743	3.1272	2.9906	2.7454	2.5320	2.3452
6	4.3553	4.1114	3.8887	3.7845	3.6847	3.4976	3.3255	3.0205	2.7594	2.5342
7	4.8684	4.5638	4.2883	4.1604	4.0386	3.8115	3.6046	3.2423	2.9370	2.6775
8	5.3349	4.9676	4.6389	4.4873	4.3436	4.0776	3.8372	3.4212	3.0758	2.7860
9	5.7590	5.3282	4.9464	4.7716	4.6065	4.3030	4.0310	3.5655	3.1842	2.8681
10	6.1446	5.6502	5.2161	5.0188	4.8332	4.4941	4.1925	3.6819	3.2689	2.9304
11	6.4951	5.9377	5.4527	5.2337	5.0286	4.6560	4.3271	3.7757	3.3351	2.9776
12	6.8137	6.1944	5.6603	5.4206	5.1971	4.7932	4.4392	3.8514	3.3868	3.0133
13	7.1034	6.4235	5.8424	5.5831	5.3423	4.9095	4.5327	3.9124	3.4272	3.0404
14	7.3667	6.6282	6.0021	5.7245	5.4675	5.0081	4.6106	3.9616	3.4587	3.0609
15	7.6061	6.8109	6.1422	5.8474	5.5755	5.0916	4.6755	4.0013	3.4834	3.0764
16	7.8237	6.9740	6.2651	5.9542	5.6685	5.1624	4.7296	4.0333	3.5026	3.0882
17	8.0216	7.1196	6.3729	6.0472	5.7487	5.2223	4.7746	4.0591	3.5177	3.0971
18	8.2014	7.2497	6.4674	6.1280	5.8178	5.2732	4.8122	4.0799	3.5294	3.1039
19	8.3649	7.3658	6.5504	6.1982	5.8775	5.3162	4.8435	4.0967	3.5386	3.1090
20	8.5136	7.4694	6.6231	6.2593	5.9288	5.3527	4.8696	4.1103	3.5458	3.1129
21	8.6487	7.5620	6.6870	6.3125	5.9731	5.3837	4.8913	4.1212	3.5514	3.1158
22	8.7715	7.6446	6.7429	6.3587	6.0113	5.4099	4.9094	4.1300	3.5558	3.1180
23	8.8832	7.7184	6.7921	6.3988	6.0442	5.4321	4.9245	4.1371	3.5592	3.1197
24	8.9847	7.7843	6.8351	6.4338	6.0726	5.4509	4.9371	4.1428	3.5619	3.1210
25	9.0770	7.8431	6.8729	6.4641	6.0971	5.4669	4.9476	4.1474	3.5640	3.1220
26	9.1609	7.8957	6.9061	6.4906	6.1182	5.4804	4.9563	4.1511	3.5656	3.1227
27	9.2372	7.9426	6.9352	6.5135	6.1364	5.4919	4.9636	4.1542	3.5669	3.1233
28	9.3066	7.9844	6.9607	6.5335	6.1520	5.5016	4.9697	4.1566	3.5679	3.1237
29	9.3696	8.0218	6.9830	6.5509	6.1656	5.5098	4.9747	4.1585	3.5687	3.1240
30	9.4269	8.0552	7.0027	6.5660	6.1772	5.5168	4.9789	4.1601	3.5693	3.1242
35	9.6442	8.1755	7.0700	6.6166	6.2153	5.5386	4.9915	4.1644	3.5708	3.1248
40	9.7791	8.2438	7.1050	6.6418	6.2335	5.5482	4.9966	4.1659	3.5712	3.1250
45	9.8628	8.2825	7.1232	6.6543	6.2421	5.5523	4.9986	4.1664	3.5714	3.1250
50	9.9148	8.3045	7.1327	6.6605	6.2463	5.5541	4.9995	4.1666	3.5714	3.1250
55	9.9471	8.3170	7.1376	6.6636	6.2482	5.5549	4.9998	4.1666	3.5714	3.1250

Table II
(Continued)—

Year (n)	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%
1	0.8696	0.8621	0.8547	0.8475	0.8403	0.8333	0.8264	0.8197	0.8130	0.8065	0.8000	0.7937	0.7874	0.7813
2	0.7561	0.7432	0.7305	0.7182	0.7062	0.6944	0.6830	0.6719	0.6610	0.6504	0.6400	0.6299	0.6200	0.6104
3	0.6575	0.6407	0.6244	0.6086	0.5934	0.5787	0.5645	0.5507	0.5374	0.5245	0.5120	0.4999	0.4882	0.4768
4	0.5718	0.5523	0.5337	0.5158	0.4987	0.4823	0.4665	0.4514	0.4369	0.4230	0.4096	0.3968	0.3844	0.3725
5	0.4972	0.4761	0.4561	0.4371	0.4190	0.4019	0.3855	0.3700	0.3552	0.3411	0.3277	0.3149	0.3027	0.2910
6	0.4323	0.4104	0.3898	0.3704	0.3521	0.3349	0.3186	0.3033	0.2888	0.2751	0.2621	0.2499	0.2383	0.2274
7	0.3759	0.3538	0.3332	0.3139	0.2959	0.2791	0.2633	0.2486	0.2348	0.2218	0.2097	0.1983	0.1877	0.1776
8	0.3269	0.3050	0.2848	0.2660	0.2487	0.2326	0.2176	0.2038	0.1909	0.1789	0.1678	0.1574	0.1478	0.1388
9	0.2843	0.2630	0.2434	0.2255	0.2090	0.1938	0.1799	0.1670	0.1552	0.1443	0.1342	0.1249	0.1164	0.1084
10	0.2472	0.2267	0.2080	0.1911	0.1756	0.1615	0.1486	0.1369	0.1262	0.1164	0.1074	0.0992	0.0916	0.0847
11	0.2149	0.1954	0.1778	0.1619	0.1476	0.1346	0.1228	0.1122	0.1026	0.0938	0.0859	0.0787	0.0721	0.0662
12	0.1869	0.1685	0.1520	0.1372	0.1240	0.1122	0.1015	0.0920	0.0834	0.0757	0.0687	0.0625	0.0568	0.0517
13	0.1625	0.1452	0.1299	0.1163	0.1042	0.0935	0.0839	0.0754	0.0678	0.0610	0.0550	0.0496	0.0447	0.0404
14	0.1413	0.1252	0.1110	0.0985	0.0876	0.0779	0.0693	0.0618	0.0551	0.0492	0.0440	0.0393	0.0352	0.0316
15	0.1229	0.1079	0.0949	0.0835	0.0736	0.0649	0.0573	0.0507	0.0448	0.0397	0.0352	0.0312	0.0277	0.0247
16	0.1069	0.0930	0.0811	0.0708	0.0618	0.0541	0.0474	0.0415	0.0364	0.0320	0.0281	0.0248	0.0218	0.0193
17	0.0929	0.0802	0.0693	0.0600	0.0520	0.0451	0.0391	0.0340	0.0296	0.0258	0.0225	0.0197	0.0172	0.0150
18	0.0808	0.0691	0.0592	0.0508	0.0437	0.0376	0.0323	0.0279	0.0241	0.0208	0.0180	0.0156	0.0135	0.0118
19	0.0703	0.0596	0.0506	0.0431	0.0367	0.0313	0.0267	0.0229	0.0196	0.0168	0.0144	0.0124	0.0107	0.0092
20	0.0611	0.0514	0.0433	0.0365	0.0308	0.0261	0.0221	0.0187	0.0159	0.0135	0.0115	0.0098	0.0084	0.0072
21	0.0531	0.0443	0.0370	0.0309	0.0259	0.0217	0.0183	0.0154	0.0129	0.0109	0.0092	0.0078	0.0066	0.0056
22	0.0462	0.0382	0.0316	0.0262	0.0218	0.0181	0.0151	0.0126	0.0105	0.0088	0.0074	0.0062	0.0052	0.0044
23	0.0402	0.0329	0.0270	0.0222	0.0183	0.0151	0.0125	0.0103	0.0086	0.0071	0.0059	0.0049	0.0041	0.0034
24	0.0349	0.0284	0.0231	0.0188	0.0154	0.0126	0.0103	0.0085	0.0070	0.0057	0.0047	0.0039	0.0032	0.0027
25	0.0304	0.0245	0.0197	0.0160	0.0129	0.0105	0.0085	0.0069	0.0057	0.0046	0.0038	0.0031	0.0025	0.0021
26	0.0264	0.0211	0.0169	0.0135	0.0109	0.0087	0.0070	0.0057	0.0046	0.0037	0.0030	0.0025	0.0020	0.0016
27	0.0230	0.0182	0.0144	0.0115	0.0091	0.0073	0.0058	0.0047	0.0037	0.0030	0.0024	0.0019	0.0016	0.0013
28	0.0200	0.0157	0.0123	0.0097	0.0077	0.0061	0.0048	0.0038	0.0030	0.0024	0.0019	0.0015	0.0012	0.0010
29	0.0174	0.0135	0.0105	0.0082	0.0064	0.0051	0.0040	0.0031	0.0025	0.0020	0.0015	0.0012	0.0010	0.0008
30	0.0151	0.0116	0.0090	0.0070	0.0054	0.0042	0.0033	0.0026	0.0020	0.0016	0.0012	0.0010	0.0008	0.0006
35	0.0075	0.0055	0.0041	0.0030	0.0023	0.0017	0.0013	0.0009	0.0007	0.0005	0.0004	0.0003	0.0002	0.0002
40	0.0037	0.0026	0.0019	0.0013	0.0010	0.0007	0.0005	0.0004	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
45	0.0019	0.0013	0.0009	0.0006	0.0004	0.0003	0.0002	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
50	0.0009	0.0006	0.0004	0.0003	0.0002	0.0001	0.0001	0.0000	0.0000	0.0000				

Discount Table $(1+r)^n$

Year (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194
6	0.9420	0.8880	0.8375	0.7903	0.746?	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556
7	0.9327	0.8706	0.8131	0.7599	0.7?	?651	0.6228	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996
8	0.9235	0.8535	0.7894	0.7307	0.6?	.?274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768	0.0638
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0491
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378
26	0.7720	0.5976	0.4637	0.3607	0.2812	0.2198	0.1722	0.1352	0.1064	0.0839	0.0663	0.0525	0.0417	0.0331
27	0.7644	0.5859	0.4502	0.3468	0.2678	0.2074	0.1609	0.1252	0.0976	0.0763	0.0597	0.0469	0.0369	0.0291
28	0.7568	0.5744	0.4371	0.3335	0.2551	0.1956	0.1504	0.1159	0.0895	0.0693	0.0538	0.0419	0.0326	0.0255
29	0.7493	0.5631	0.4243	0.3207	0.2429	0.1846	0.1406	0.1073	0.0822	0.0630	0.0485	0.0374	0.0289	0.0224
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053
45	0.6391	0.4102	0.2644	0.1712	0.1113	0.0727	0.0476	0.0313	0.0207	0.0137	0.0091	0.0061	0.0041	0.0027
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0339	0.0213	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014

Prepared by R. B. How, Department of Agricultural Economics, Cornell University.

c) Distinguish among the following types of evaluation; Formative, Process, and Summative Evaluation.

[7 marks]

Question 5

a) What is Sensitivity Analysis? Describe the purpose of Sensitivity Analysis.

[8 marks]

b) Provide a detailed discussion of the areas to which projects are normally sensitive.

[17 marks]

Question 6

a) Why should projects be evaluated?

[7 marks]

b) Discuss the six phases in project evaluation

[18 marks]

(i) What are the disadvantages of using the IRR in project evaluation?

[5 marks]

Question 3

a) Investment analysts argue that discounted measures of project worth are superior and preferred to undiscounted measures. Do you agree with this view? Support your answer.

[5 marks]

b) Provide an evaluation of two proposed projects, both with 5 year expected lives and identical initial outlays of E100, 000. The required rate of return on these projects is 12%. The expected after tax cash flows from each project are as follows:

Year	Project A	Project B
0	-100, 000	-100, 000
1	40, 000	50, 000
2	30, 000	30, 000
3	20, 000	40, 000
4	60, 000	30, 000
5	60, 000	50, 000

What is the discounted Payback period on each project? If the government imposes a three year maximum payback period, which of these projects would be accepted?

[7 marks]

c) Discuss a project life cycle

[13 marks]

Question 4

a) Suppose a project has an initial cost outlay of E18, 000 and annual net cash flows of E6, 200 over 5 years, calculate the Internal Rate of return.

[10 marks]

b) Suppose one starts with E1000 cash flow which is compounded forward using variable interest rates of 10%, 20% and 15% over years 1, 2, and 3 respectively. Use Total Discount Factors (TDF) to compute the present values of the project over the three years.

[8 marks]

3

Question 1

a) Assume you are in the business of producing/publishing textbooks, and are currently considering producing a textbook for high schools in Swaziland. Your investigations indicate that the fixed costs associated with such a project are E40, 000, the variable costs are E1.20 per book and you can only sell the book at E2.00 per copy. You have also found that, given the existence of other producers, you cannot sell more than 40, 000 copies.

i) Using break-even analysis, determine if you should publish this textbook. Use diagrams to illustrate your answer. [8 marks]

ii) Calculate the amount of profit/loss experienced by the company.
[5 marks]

b) A company is interested in an investment which would require a capital outlay of E10,000 immediately and is expected to produce net cash inflows of E8, 000 per year for the first four years and E4, 000 in the fifth year. Also, assume that the management of the company has an 8% acceptable rate of return investment criteria. Calculate the Return on Investment for this project and determine if the company should invest in the project.
[12 marks]

Question 2

a) Hardware Enterprises is interested in initiating an income generating project. The management has decided to set aside E40, 000 as an investment capital. However, the management is divided as to which of the two mutually exclusive projects with the same life of six years is to be undertaken. Details on these options are as follows:

The first capital project has the following cashflows: E10, 000 for the first two years; followed by E15, 000; and then E19, 000 for the rest of its life.

The second project has the following cashflows: E15, 000; E9, 000; E15, 000; E12, 000 ; 12000 and a terminal value of E5, 000

The minimum acceptable rate of return is 8%

As an economist, use the NPV approach to advise this company.
[13 marks]

b) (i) Assume an initial (investment cost of E25, 000 with a cashflow/yield of E42, 000 after 1 year. If the market rate of interest is 35%, use the Internal Rate of Return (IRR) criterion to determine if the investment is viable?
[7 marks]

UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER, 2013

TITLE OF PAPER :   PROJECT DEVELOPMENT AND FINANCIAL
                               ANALYSIS

COURSE CODE   :   ECON 308

TIME ALLOWED :   TWO (2) HOURS

INSTRUCTIONS :   1.   ANSWER ANY <u>THREE</u> QUESTIONS:

                                  2.   ALL QUESTIONS CARRY EQUAL
                                       MARKS OF 25 EACH

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