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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2018/2019**

COURSE NAME : BUSINESS VALUATION
COURSE CODE : BPE 35403
PROGRAMME CODE : BPD
EXAMINATION DATE : JUNE / JULY 2019
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF SIX (6) PAGES

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- Q1** (a) Discuss **FOUR (4)** basic steps for conducting valuation of business. (12 marks)
- (b) Business valuation analyst generally use a weighting scheme to derive the conclusion on business value of firm under review.

Discuss the concept of weighting scheme with example.

(8 marks)

- Q2** The board of directors of Stone & Sand Bhd (SSB), a company engaged in real estate business has received a proposal from Mega Properties Bhd (MPB) to acquire the entire shares in the company. The latest due diligent report done by MPB on SSB financial data has projected the free cash flow (FCF) of the company for year 2019 to 2023 as **Table Q2**. Cost of capital for MPB is 8%. The capitalization multiple rate for SSB is 10%.

Table Q2: Projected FCF 2019-2024 for Stone & Sand Bhd

Year	2019	2020	2021	2022	2023	2024
	RM'000	RM'000	RM'000	RM'000	RM'000	Terminal value of cash flow
EBIT	1,801	1,888	2,000	2,300	2,500	
Corporate tax rate	26%	26%	26%	26%	26%	
Debt free Net income	?	?	?	?	?	1,900
Depreciation	480	490	500	500	500	500
Capital expenditure	390	400	450	300	400	450
Working capital requiement	80	90	95	80	85	60

- (a) Calculate:
- (i) Free cash flow for 2019 to 2023. (5 marks)
- (ii) Terminal cash flow for year 2024. (5 marks)
- (b) Calculate the present value of terminal cash flow assuming the capitalization multiple rate at 10% and cost of capital at 8%. (8 marks)
- (c) Calculate the present value of discrete cash flow for 2019 to 2023. (8 marks)

- (d) Determine the total enterprise value of SSB based on answer in **Q2 (b)** and **Q2 (c)**.
(4 marks)

Q3 The following **Table Q3** is a summary of valuation for 12 guideline companies (GC) which were used as the basis for the fair market value under the public company valuation method. All financial data is in US dollars equivalent. You are required to prepare valuation of business for company ABC which is the target for propose takeover exercise by your parent company. The latest audited balance sheet of company ABC recorded cash balance of USD 50,000 and interest bearing debt of USD 200,000. The average annual net sales of the company is USD 9,000,000 and EBIDTA margin of 20%.

Table Q3: Summary of valuation of guideline companies

Guideline Company (GC)	Stock Exchange	Enterprise value (EV)	Net Sales	EV multiple of net sales	EBITDA	EV multiple of EBITDA	EBITDA margin (%)
		USD'mil	USD'mil		USD'mil		
GC #1	NASDAQ	7.5	8.5	0.9	1.2	6.3	14.1
GC #2	NASDAQ	5.5	9.5	0.6	1.5	3.7	15.8
GC #3	NYSE	20.3	15.2	1.3	2.2	9.2	14.5
GC #4	NYSE	4.9	3.9	1.3	0.6	8.2	15.4
GC #5	SGX	7.5	3.6	2.1	0.8	9.4	22.2
GC #6	LONDON	9.2	8	1.2	2	4.6	25.0
GC #7	HKSE	6.7	4.5	1.5	1.2	5.6	26.7
GC #8	KLSE	0.8	1.5	0.5	0.2	4.0	13.3
GC #9	KLSE	1.2	2.5	0.5	0.3	4.0	12.0
GC #10	KLSE	5.5	4.8	1.1	1.3	4.2	27.1
GC #11	SGX	4.2	7.2	0.6	1.8	2.3	25.0
GC #12	KLSE	4.2	5.3	0.8	0.5	8.4	9.4
		High		2.1		9.4	27.1
		Median		1.0		5.1	15.6
		Low		0.5		2.3	9.4

- (a) Calculate the following value of company ABC (assuming the multiple factors use is at median level):
- (i) Enterprise value. (6.5 marks)
 - (ii) Equity market value. (6.5 marks)
- (b) Differentiate **THREE (3)** advantages between market comparative valuation and discounted cash flow method. (12 marks)

- Q4** The following **Table Q4** is selected financial information of Megatech Corp which owned the intellectual property (IP) right for Megatech patent license IP. Patent IP contributes 80% to total revenue of the company. Megatech Corp as the licensor is entitled for 33% of patent IP benefit for any 3rd party transactions.

Table Q4: Selected financial information of Megatech Corp.

	Projection period					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	(RM'mil)	(RM'mil)	(RM'mil)	(RM'mil)	(RM'mil)	(RM'mil)
Revenue	340	384	430	430	380	350
Amortization of R&D and investment	20	20	18	18	16	16
Production cost	150	150	150	120	120	110
Marketing costs	90	90	75	65	60	60
Total Cost	260	260	243	203	196	186

- (a) Calculate royalty rate for Megatech patent license IP. (8 marks)
- (b) Analyze fair market value for megatech patent IP using royalty relief valuation method assuming the cost of capital is 10% and annual patent license IP maintenance expenses is USD 10 million. (8 marks)
- (c) Discuss **THREE (3)** challenges in business valuation with regards to intangible assets. (9 marks)

- END OF QUESTIONS -

FINAL EXAMINATION

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Present value interest factor of \$1 per period at i% for n periods, PVIF(i,n)

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057
35	0.706	0.500	0.355	0.253	0.181	0.130	0.094	0.068	0.049	0.036
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032	0.022
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013	0.009

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Present value interest factor of \$1 per period at i% for n periods, PVIF(i,n)

Period	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065
16	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026
25	0.074	0.059	0.047	0.038	0.030	0.024	0.020	0.016	0.013	0.010
30	0.044	0.033	0.026	0.020	0.015	0.012	0.009	0.007	0.005	0.004
35	0.026	0.019	0.014	0.010	0.008	0.006	0.004	0.003	0.002	0.002
40	0.015	0.011	0.008	0.005	0.004	0.003	0.002	0.001	0.001	0.001
50	0.005	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000