

Question 4 (30 MARKS)

Hotels 365 Ltd

(a) **Weighted average cost of capital (WACC)** ✓presentation

Calculation of WACC

Ref to detail work-ings	Capital structure	Market value of instruments in Rand	Marks if 100% correct	Portion of capital structure	Cost of capital	Marks if 100% correct	Weighted cost of capital	Principle marks
(1)	Ordinary shares	4 000 000 000	(2)	0,62	20%	(6)	12,40%	(1)
(2)	Preference shares	1 500 000 000	(3)	0,23	10%	(1)	2,30%	(1)
(3)	Debentures	926 151 006	(6)	0,15	9%	(1)	1,35%	(1)
	Total	6 426 151 006		1/100%			16,05%	These are concept marks if portion % and cost is included in question
			(1) Concept but only if included- not included = 0			(1) Concept		
			May award if other forms of finance are included.			May not award WACC total mark if other forms of finance is also included.		

(Available: 25 marks)

(MAX: 22 marks)

Detailed workings

		Market value	Cost of capital																								
(1)	Ordinary shares	= Number of issued shares x current market price (ex div) = 20 mil ✓ x (225 – 25) ✓ = R4 000 million	$K_e = \frac{D_1}{P} + g$ $= \frac{25 (1+0,07)}{200} + 0,07 \checkmark$ $= 20,37\%$ $= 20\% \quad (3)$																								
		<p>Other alternatives that are not correct but can still earn marks:</p> = 20 mil ✓ x (225) = R4 500 million = 20 mil ✓ x (25) = R500 million	<p>IF 7,18 was used then the answer = 20,58% which is 21%</p> <p>Many scripts have only the following information – therefore mark allocation</p> <table border="1"> <tr> <td>$\frac{25}{200} \checkmark\checkmark$</td> <td>OR</td> <td>$\frac{25}{225} \checkmark$</td> </tr> <tr> <td>=12,5%</td> <td></td> <td>=11,11%</td> </tr> </table> <p>Calculating growth: According to the information the dividend has grown constantly from 2005 and it is expected that it will continue to grow at this rate in the future:</p> <table> <tr> <td>PV</td> <td>=</td> <td>12,50</td> <td>✓</td> </tr> <tr> <td>FV</td> <td>=</td> <td>-25</td> <td>^</td> </tr> <tr> <td>PMT</td> <td>=</td> <td>0</td> <td>^</td> </tr> <tr> <td>N</td> <td>=</td> <td>10</td> <td>✓</td> </tr> <tr> <td>Comp I</td> <td>=</td> <td>7,18%</td> <td></td> </tr> </table> <p>Growth = 7% (3)</p>	$\frac{25}{200} \checkmark\checkmark$	OR	$\frac{25}{225} \checkmark$	=12,5%		=11,11%	PV	=	12,50	✓	FV	=	-25	^	PMT	=	0	^	N	=	10	✓	Comp I	=
$\frac{25}{200} \checkmark\checkmark$	OR	$\frac{25}{225} \checkmark$																									
=12,5%		=11,11%																									
PV	=	12,50	✓																								
FV	=	-25	^																								
PMT	=	0	^																								
N	=	10	✓																								
Comp I	=	7,18%																									
		(2)																									

		Market value	Cost of capital
			$FV = PV \times (1 + g)^{10}$ $25 = 12,50 (1 + g)^{10}$
(2)	Preference shares	$= \frac{\text{Dividend on preference shares}}{\text{Cost of equity}}$ $= \frac{R1250 \text{ million} \times 12\%}{10\%} \quad \checkmark\checkmark\checkmark \text{ for each principle}$ <p>(2MARKS TOP LINE AND 1 BOTTOM)</p> $= \frac{R150 \text{ million}}{10\%}$ $= R1\,500 \text{ million}$ <p style="text-align: right;">(3)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Many scripts have only the following information – therefore mark allocation</p> $\frac{R1\,250 \text{ million}}{10\%} \quad \checkmark\checkmark \quad \text{or} \quad \frac{500\,000 \times 12\%}{10\%} \quad \checkmark\checkmark$ $= R12\,500 \text{ million} \quad \text{or} \quad R600\,000$ </div>	$K_e = 10\%$ <p style="text-align: right;">(1)</p>

		Market value	Cost of capital																				
(3)	Debentures (Alternative 1)	Present value (PV) of the interest income for 8 years at an after tax cost of debt of 9%																					
		$K_d = 12,5\% \times 0,72$ ✓ $= 9\%$	(1)																				
		<table border="1"> <tr> <td>FV</td> <td>=</td> <td>R850 000 000 x 0,98 = -R833 000 000</td> <td>✓ (calculation) ^ (substitution principle in PV calculation)</td> </tr> <tr> <td>PMT</td> <td>=</td> <td>R850 million x 15% x 0,72% = R91,8 million</td> <td>✓ (calculation) ^ (substitution principle in PV calculation)</td> </tr> <tr> <td>I/YR</td> <td>=</td> <td>9%</td> <td>✓</td> </tr> <tr> <td>N</td> <td>=</td> <td>8</td> <td>✓</td> </tr> <tr> <td>COMP PV</td> <td>=</td> <td>R926 151 006</td> <td>✓</td> </tr> </table>		FV	=	R850 000 000 x 0,98 = -R833 000 000	✓ (calculation) ^ (substitution principle in PV calculation)	PMT	=	R850 million x 15% x 0,72% = R91,8 million	✓ (calculation) ^ (substitution principle in PV calculation)	I/YR	=	9%	✓	N	=	8	✓	COMP PV	=	R926 151 006	✓
		FV		=	R850 000 000 x 0,98 = -R833 000 000	✓ (calculation) ^ (substitution principle in PV calculation)																	
		PMT		=	R850 million x 15% x 0,72% = R91,8 million	✓ (calculation) ^ (substitution principle in PV calculation)																	
		I/YR		=	9%	✓																	
N	=	8		✓																			
COMP PV	=	R926 151 006	✓																				
(6)																							
(If 15% x 0,72 was rounded to 11% the pmt = R93 500 000)																							
OR																							
	Debentures (Alternative 2)	= (Interest after tax x annuity factor) + (future value x discounting factor)																					
		= [(R850 million x 15% x 0,72%) ✓ x 5,5348 ①] + [(R850 million x 0,98) ✓ x 0,5019]																					
		= R91 800 000 x 5,5348 + R833 000 000 x 0,5019																					
		= 508 094 640 + 418 082 700																					
		= 926 177 340 ✓																					
		(If 15% x 0,72 was rounded to 11% the pmt = R93 500 000)																					

	Market value	Cost of capital
	<p>① Annuity factor = $\frac{1 - \frac{1}{(1+i)^n}}{i}$</p> <p>= $\frac{1 - \frac{1}{(1+0,09)^8}}{0,09}$</p> <p>= 5,5348 ✓✓</p> <div data-bbox="568 528 1377 729" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>If you the student included the wrong rate but the year is correct you may award ^ a mark.</p> <p>If the student included the wrong number of years but the correct rate you may award ^ a mark</p> </div> <p>② Discounting factor = $\frac{1}{(1+i)^n}$</p> <p>= $\frac{1}{(1+0,09)^8}$</p> <p>= 0,5019 ✓</p> <div data-bbox="568 1046 1377 1248" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>If you the student included the wrong rate but the year is correct you may award ^ a mark.</p> <p>If the student included the wrong number of years but the correct rate you may award ^ a mark</p> </div> <p style="text-align: center;">OR</p>	

Question 4 (continued)

(b) Impact of issuing cost on cost of equity:

Cost of equity is determined by dividing the dividend by the value of the share. Issuing cost will **decrease the value of the share**✓ and therefore it will **increase the cost of equity**✓.

$$\text{Cost of equity } (K_e) = \frac{D_1}{P} + g \quad (2)$$

(c) Number of shares

$$\begin{aligned} \text{New investment financed through equity} &= \text{R540 000 000} \times 60\% \text{ (equity portion)} \\ &= \text{R324 000 000} \quad \checkmark \end{aligned}$$

R124 000 000 of the equity portion will be financed through retained earnings and the remainder should be funded through the issuing of new shares

$$\begin{aligned} \text{Funding through new shares} &= \text{R324 000 000} - \text{R124 000 000} \quad \checkmark\checkmark \\ &= \text{R200 000 000} \end{aligned}$$

$$\begin{aligned} \text{Number of new shares} &= \text{R200 000 000} / \text{R200} \quad \checkmark \\ &= 1\,000\,000 \text{ shares has to be issued to fund the Eastern Cape expansion} \end{aligned}$$

(4)

(d) List two assumptions behind the use of a firm's current WACC as the discount rate in an investment appraisal.

- i. The firm will retain its existing proportion of debt to equity capital (current = target)
- ii. The project is marginal. Most investments are indeed small, relative to the total capital value of the firm.
- iii. The project has the same level of risk as the firm's existing activities. If the project has a risk structure that differs from that of the existing activities, an appropriate risk-adjusted rate should be used.
- iv. Cost of equity will remain the same
- v. Cost of debt will remain the same
- vi. WACC will remain unchanged. (2)

QUESTION 4 TOTAL MARKS: 30