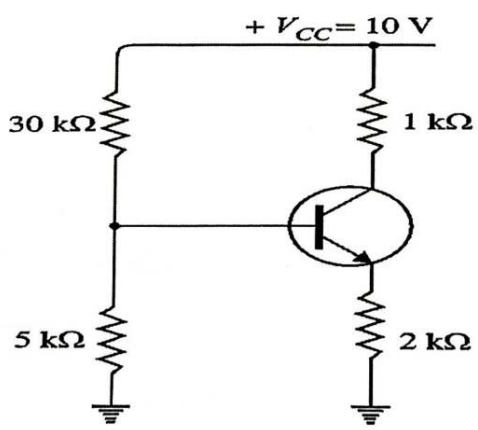
Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science and Engineering
Final Examination, Summer - 2026
Course Code: CSE215 Course Title: Electronic Devices and Circuits
Level: 2 Term: 2 Batch: 68

Exam Duration:2 Hours **Marks: 40**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	***a)***	**Draw** the block diagram of multistage amplifier.	**[2]**	**CO1**
	b)	**Define** feedback and state its significance in electronic amplifiers.	**[2]**	
	c)	**Define** faithful amplification and state the conditions required to achieve it.	**[2]**	
	d)	**State the** role of Emitter bypass capacitor (C_E) and Coupling capacitor (C_C).	**[2]**	
	e)	**List** the Ideal characteristics of OP-Amp.	**[2]**	
2.	***a)***	**Describe** the working principle of E-MOSFET with necessary diagram.	**[5]**	**CO2**
	b)	**Discuss** tank circuit with necessary circuit diagram.	**[5]**	
3.	***a)***	A 1 pF capacitor is available. Calculate the inductor values in a Hartley oscillator so that f = 1 MHz and m_v = 0.2.	**[5]**	**CO3**
	b)	In a transistor circuit shown in Fig. 01, determine the operating point. Assume silicon transistor is used.  Fig. 01	**[5]**	

	c)	An amplifier has an open-loop gain Av = 100,000. Negative feedback of 10 db is applied. Solve for: (i) voltage gain with feedback (ii) value of feedback fraction m_v.	**[5]**	
	d)	Determine the value of I_C for voltage divider method if V_{CC} = 9V, R_E = 1kΩ, R_1 = 39 kΩ, R_2 = 10 kΩ, R_C = 2.7 kΩ, V_{BE} = 0.15 V and β = 90.	**[5]**	