Sekolah:	**SEKOLAH KEJURUTERAAN ELEKTRIK**	
Nama Matapelajaran: Makmal Kejuruteraan Elektrik Kod Matapelajaran : SKEM 3742	Semakan : 1 Tarikh Keluaran : 2020 Pindaan Terakhir : 2020 No. Prosedur **: PK-UTM-FKE-(0)-10**	

SKEM 3742

SEKOLAH KEJURUTERAAN ELEKTRIK
FAKULTI KEJURUTERAAN
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ROBOTICS LAB
PROBLEM PACK

INDUSTRIAL ROBOTS

Disediakan oleh		Disahkan oleh : Pengarah	
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Tarikh	: 27 April 2020	Tarikh	:

PROBLEM:

An automation company would like to hire new engineers to handle their industrial robots (Kuka **KR 6 R900 sixx** and **ABB IRB 120** as shown in Figure 1) for their new production line. The company conducts an interview to test the capability and competency of the interviewees, in which the interviewees are required to operate the Kuka or ABB robot in solving Hanoi Tower problem.

Your group task is to solve the 3-tier Hanoi Tower problem using ABB RobotStudio® software. In the Hanoi Tower problem, the stack of blocks labelled with number 1, 2 and 3 will be rearranged at another predefined area according to a planned sequence. The goal is to determine the shortest running time of the given task under nominal operating speed of the robot. Figure 2 illustrates two different trajectories normally practiced in industry but your team can decide to use any other possible trajectories to achieve this objective. The following commands may be useful to design the trajectories:

MoveL – to move the tool centre linearly to final destination

MoveJ – to move in nonlinear path based on joint of axes

MoveC – to move the tool centre in circular path
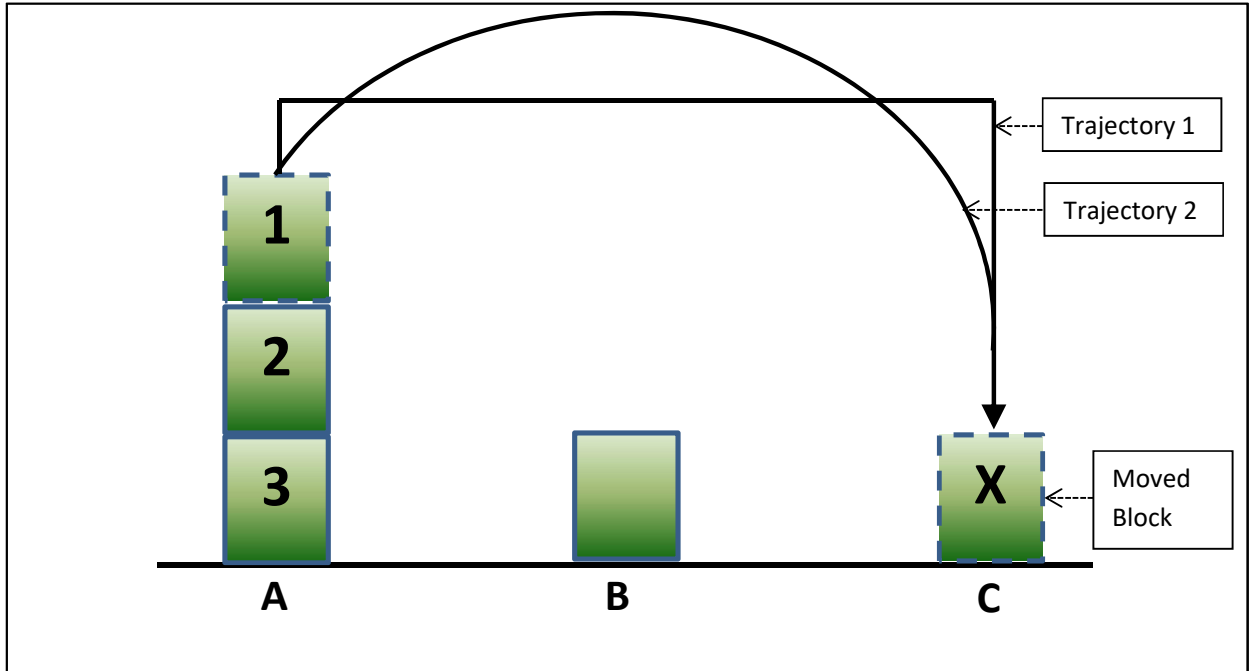

(a) ABB IRB 200   (b) Kuka KR 6 R900 sixx
Figure 1 The industrial robots to be used to solve the Hanoi Tower problem.

Figure 2 Example of two different trajectories