**Section: A**

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q1:** | **Question 1 [17 Marks]**  Mark is a cost analyst with Rocky Asia Pte Ltd. He is looking into performing cost reduction activities on a newly designed product: Model R2. Rocky Asia still continue to produce an older Model R1 which is in demand by certain customers. Here are the costs he has collected for the new Model R2:  • Material cost incurred in the production of Model R2 (cost information unavailable at the time of study) • Labour cost for production of Model R2 at a rate of $15 per hour • Software development cost by local team which was budgeted at $1.5million. This software will only be used by Model R2.   • New equipment purchase cost from the United States which is valued at $400,000. It will be shared across a few product lines.  • Facility rental cost to be paid for the entire manufacturing facility which is at the rate of $1 psf  1a) Identify **one** direct cost among the costs listed above. Explain. (2 Marks) | **Mark (2)** |
|  |  | |
|  | Word Count: 31 | Max Words: 100 |

Bottom of Form

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q2:** | 1b) Identify **one** indirect cost among the costs listed above. Explain. (2 Marks) | **Mark (2)** |
|  |  | |
|  | Word Count: 25 | Max Words: 100 |

Bottom of Form

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q3:** | 1c) Before launching the **Model R2** into the market, Mark would need to propose the selling price to the business managers. Table 1a below shows the costs involved in producing one batch of Model R1 and Model R2.  C:\Users\17046589\AppData\Roaming\Republic Poly\eQuest\_assessmentimages\_assessmentimg_-649576500_1140419554.jpeg  Show your workings clearly and round off all answers to 2 decimal places when necessary.  1c(i) Calculate the direct material cost for one unit of **Model R2**. (2 Marks)  1c(ii) Calculate the direct labour cost for one unit of **Model R2**. (2 Marks)  1c(iii) Determine the overhead cost for one unit of **Model R2**. Using the conventional costing method, allocate the overhead cost based on the batch size of Model R1 and Model R2. (4 Marks)  1c(iv) Determine the unit production cost for **Model R2**. (2 Marks) | **Mark (10)** |
|  |  | |
|  | Word Count: 23 | Max Words: 300 |

Bottom of Form

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q4:** | 1c(v) Rocky Asia Pte. Ltd. is currently selling its original **Model R1** at a price of $59. If the unit production cost of **Model R1** is $52. Will the company be able to make at least 10% profit margin? Explain. Show your workings clearly. (3 Marks) | **Mark (3)** |
|  |  | |
|  | Word Count: 48 | Max Words: 100 |

Bottom of Form

**Section: B**

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q5:** | **Question 2 [9 Marks]**  MS Excel functions (e.g. NPV()) are not acceptable as working. Show your workings clearly and round off all answers to 2 decimal places when necessary.  Bernard is looking to purchase a car. He is only able to take a loan of $70,000 now. And he will need to pay at the end of 7 years. After some research, he has narrowed it down to the following loan options.  Bank Alpha: 3.5% annual compound interest payable at the end of year 7. Bank Beta: 3.8% annual simple interest payment at the end of year 7.  2a)  Which bank should Bernard choose? Explain. Show your workings clearly. (6 Marks) | **Mark (6)** |
|  |  | |
|  | Word Count: 43 | Max Words: 300 |

Bottom of Form

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q6:** | 2b)  Bernard was offered one more option from Bank Delta. The bank claims Bernard only needs to pay $89,000 at the end of 7 years with a lower interest rate. Determine the annual compound interest rate offered to Bernard based on this amount. (3 Marks) | **Mark (3)** |
|  |  | |
|  | Word Count: 42 | Max Words: 100 |

Bottom of Form

**Section: C**

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q7:** | **Question 3 [4 Marks]**  Show all your workings clearly and round off all answers to the nearest dollar when necessary.  Terry is considering an investment in his friend’s cafeteria. The required initial investment of $18,000 and the projected cash flow over a 5-year period are given in Table 3a below.  C:\Users\17046589\AppData\Roaming\Republic Poly\eQuest\_assessmentimages\_assessmentimg_-347532823_2100959868.jpeg  3a) Using Simple Payback Method, work out the payback period of this investment? Show your workings clearly. (4 Marks) | **Mark (4)** |
|  |  | |
|  | Word Count: 41 | Max Words: 200 |

Bottom of Form

**Section: D**

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q8:** | **Question 4 [6 Marks]**  Show your workings clearly and round off all answers to 2 decimal places.  John and June worked as operators who are responsible in the assembly of electric fans in a company.    4a) John took 20 mins to assemble his first electric fan. The slope parameter of John’s learning curve is 86%. Calculate the time required for John to assemble the 12th electric fan. (4 Marks) | **Mark (4)** |
|  |  | |
|  | Word Count: 47 | Max Words: 200 |

Bottom of Form

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q9:** | 4b) Figure 4a below shows the learning curves of electric fan assembly time for John and June. June’s learning curve is 93%. Which curve represents John’s learning curve? Who takes a longer total time to assemble the first 12 electric fan? (2 Marks)  C:\Users\17046589\AppData\Roaming\Republic Poly\eQuest\_assessmentimages\_assessmentimg_-1093613910_-1743806906.jpeg | **Mark (2)** |
|  |  | |
|  | Word Count: 56 | Max Words: 100 |

Bottom of Form

**Section: E**

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q10:** | **Question 5 [14 Marks]**  Show all your workings clearly with at least 4 decimal places for interest factor notation used and round off all answers to 2 decimal places. MS Excel functions (e.g. NPV(),IRR()) are **not** acceptable as working.  Infinity Technology is planning to buy a new equipment to improve the product quality and production efficiency. Figure 5a below shows the cashflow associated with the investment. The equipment is expected to last 10 years in the production.  C:\Users\17046589\AppData\Roaming\Republic Poly\eQuest\_assessmentimages\_assessmentimg_977232437_-1259919570.jpeg  5a) Assume that Infinity Technology’s Minimum Attractive Rate of Return (MARR) is 12% per year. Using **Interest Factor Notation** method, determine the Present Worth of this investment project using the Compound Interest Table in Table 5a. Is the project economically feasible? Explain.  (6 Marks)  C:\Users\17046589\AppData\Roaming\Republic Poly\eQuest\_assessmentimages\_assessmentimg_977232437_-1052960869.jpeg | **Mark (6)** |
|  |  | |
|  | Word Count: 63 | Max Words: 300 |

Bottom of Form

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q11:** | 5b) Assume that Infinity Technology’s reinvestment rate is also 12% per year, the same as its Minimum Attractive Rate of Return (MARR).  5b(i) Infinity Technology plans to reinvest all its annual revenue. Determine the Future Worth of all **revenue** at the end of the project. Refer to Compound Interest Table in Table 5a. (3 Marks)  5b(ii) Determine the External Rate of Return (ERR) by comparing the equivalent present value of all **expenses** with the equivalent future value of all **revenues**. (3 Marks) | **Mark (6)** |
|  |  | |
|  | Word Count: 82 | Max Words: 300 |

Bottom of Form

Top of Form



|  |  |  |
| --- | --- | --- |
| **Q12:** | 5b(iii) During computation of the rate of return for an investment, state two possible limitations when IRR is not suitable and ERR is required instead. (2 Marks) | **Mark (2)** |
|  |  | |
|  | Word Count: 31 | Max Words: 100 |

Bottom of Form