ASSIGNMENT BRIEF This Assignment assesses the following module Learning Outcomes: 1. Select and apply quantitative modelling concepts for problem solving and decision making. 2. Use classical decision theory as aid to decision making. 3. Acquire a critical awareness of the logical process of modelling complex decision problems. 4. Apply techniques and practice to model real-world problems. 5. Derive solution(s) using a suitable software package when required. 6. Critically analyse and report results. Assignment Brief: This individual assignment requires that you answer Questions 1 and 2 below. 1. Linear Programming has been successfully applied in many Operations Research applications. Therefore, a) describe, with the aid of two self-selected case studies from the literature, examples where Linear Programming has been applied as a mathematical technique to help Operations Research managers to plan and make the decision necessary to allocate resources, and b) discuss limitations of Linear Programming. 2. Dr Wellman Hun is the Operations Director of XYZ-Brains Ltd based in Hertfordshire UK. The company manufactures smart suitcases and they intend to introduce Radio-frequency identification (RFID) technology into their manufacturing operations. Wellman has requested for a simulation of their manufacturing operations to study the impact of RFID solution on their productivity. You are required to: a) Explain to Dr Wellman Hun the advantages of simulation, b) Develop a plan for the XYZ-Brains Ltd.’s proposed simulation study, and c) Critically discuss the proposed plan. Presentation Your technical report must be written in an appropriate format and must contain no more than 3000±10% words including any diagrams, calculations, figures and/or tables where appropriate. Reports shorter than the word count will not lose marks but will lead to the omission of material which can gain them. Any words over the suggested word count will not be marked. Do not use any mechanism, such as embedded jpeg images containing significant text, to circumvent the word count. You are expected to provide secondary sources to underpin your work. These must be cited and referenced according to the Harvard Referencing System. Include the word count in the header of your report. Ensure that your technical report is well-structured and choose appropriate number and titles for the sections of the report please. There is no need to number the references section. Your technical report must follow the content and guidance above and must include the specific instructions outlined below. 1. Word-process the report on A4 paper size, using 1.15 line spacing. 2. Font type must be Arial, font size 11. 3. Ensure that all diagrams (figures) / tables are labelled and numbered. 4. Title Page is NOT required. 5. Table of Contents page is NOT required. 6. Number all pages. 7. Grammar, spelling and style, as well as clarity, contribute towards the assessment of the report; Use British Spelling i.e. ‘English (UK) Language’. 8. Justify paragraphs – Align text to both left and right margins, using your word processor to add extra space between words as necessary. 9. Ensure that you focus on the requirements of the assignment brief. Be clear about the marking scheme stated in the ‘Marks out of 100% awarded for’ section below. Additional Note on Referencing Mark is allocated for referencing in this assignment, and the mark is influenced by the thoroughness and integrity of the work as evidenced by your referencing. Marks are awarded not only for correct referencing practice, but also the extent to which the arguments have been supported by cited sources. Related work must be cited and referenced according to the Harvard Referencing System. MARKING SCHEME Knowledge and Understanding of Operations Research in the context of the questions in this assignment. 10 % 1.Successful applications of Linear Programming. 35 % a) Selected case studies, description and analysis. 25 % b) Limitations of Linear programming. 10 % 2. XYZ-Brains Ltd.’s proposed simulation study. 45 % c) Explain to Dr Wellman Hu the advantages of simulation. 15 % d) Develop a plan for the XYZ-Brains Ltd.’s proposed simulation study. 20 % e) Critically discuss the proposed plan. 10 % Overall Presentation, report structure, effective communication, keeps to word limit, and use of appropriate referencing system. 10% TOTAL 100%