**EGCO 372 Data Communications and Networks**

**(SO1 SO2 SO7)**

**SO1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and mathematics.**

**Passing criterion >= 70%**

PI 1-1 Identify and formulate engineering problems

PI 1-2 Solve problems by applying mathematics and engineering knowledge

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PI 1-1 Identify and formulate engineering problems

**Q1: Midterm Exam (problem 4) (Term1 2561)**

(30) 4.) จงหาเวลาในการส่ง Message = 5 MB (ให้ 1 MB = 1,000,000 Bytes) จาก A ไปถึง B โดยสมบูรณ์

1 2 4

A node node node B

กำหนดให้ Packet มีขนาด 1500 Bytes เสมอ, Transmission rate = 10 Mbps,

Propagation time = 0.0001 วินาที ต่อ 1 link (จาก node ไป node), จำนวน Node ระหว่าง A กับ B คือ 4 nodes, Connection time = 2 วินาที (ถ้ามี)

(10) a) การสื่อสารเป็นแบบ Message switching (แบบ connectionless service)

(10) b) การสื่อสารเป็นแบบ Packet switching (แบบ connectionless service)

(10) c) การสื่อสารเป็นแบบ Circuit switching

| **Student No.** | **Q1: PI 1-1** | **Q1: PI 1-2** |
| --- | --- | --- |
| 5813342 | ✓ | ✓ |
| 5913197 | ✓ | ✓ |
| 5913198 | 🗶 | 🗶 |
| 5913200 | 🗶 | 🗶 |
| 5913201 | ✓ | ✓ |
| 5913203 | 🗶 | 🗶 |
| 5913204 | ✓ | ✓ |
| 5913205 | 🗶 | 🗶 |
| 5913207 | 🗶 | 🗶 |
| 5913208 | 🗶 | 🗶 |
| 5913210 | ✓ | ✓ |
| 5913211 | ✓ | ✓ |
| 5913212 | ✓ | ✓ |
| 5913213 | 🗶 | 🗶 |
| 5913214 | 🗶 | 🗶 |
| 5913215 | ✓ | ✓ |
| 5913216 | 🗶 | 🗶 |
| 5913217 | ✓ | ✓ |
| 5913218 | ✓ | ✓ |
| 5913219 | 🗶 | 🗶 |
| 5913220 | ✓ | ✓ |
| 5913221 | ✓ | ✓ |
| 5913375 | 🗶 | 🗶 |
| 5913376 | 🗶 | 🗶 |
| 5913377 | ✓ | ✓ |
| 5913378 | 🗶 | 🗶 |
| 5913380 | 🗶 | 🗶 |
| 5913381 | 🗶 | 🗶 |
| 5913382 | 🗶 | 🗶 |
| 5913383 | 🗶 | 🗶 |
| 5913384 | 🗶 | 🗶 |
| 5913385 | 🗶 | 🗶 |
| 5913386 | ✓ | ✓ |
| Number of Pass | 14 | 14 |

PI 1-1: Attainability = 14/33 = 42.4% **Not attainable**

PI 1-2: Attainability = 14/33 = 42.4% **Not attainable**

**SO1 Conclusion**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PI** | **Attainability** | **Reason** | **Remedial Action** | **Action plan** | **Measurements** |
| 1-1 | 🗶 | Many students don’t understand the detail differences of the a) b) and c | Spend more time on the topic. | Next offer |  |
| 1-2 | 🗶 | Unable to set up the problem correctly. | The solving is not difficult if the students can formulate the problem. |  |  |

**SO2. An ability to apply engineering design to produce solutions that**

**meet specified needs with consideration of public health, safety, and**

**welfare, as well as global, cultural, social, environmental, and**

**economic factors**

**Passing criterion >= 70%**

PI 2-1 Produce design that meet set of requirement

PI 2-2 Apply appropriate existing solutions

**Question#1:** Homework exercise (Group work): Design a network to operate under the following conditions:

(see attached documents)

| **Student No.** | **Q1: PI 2-1** | **Q1: PI 2-2** |
| --- | --- | --- |
| 5813342 | ✓ | ✓ |
| 5913197 | ✓ | ✓ |
| 5913198 | ✓ | ✓ |
| 5913200 | ✓ | ✓ |
| 5913201 | ✓ | ✓ |
| 5913203 | ✓ | ✓ |
| 5913204 | ✓ | ✓ |
| 5913205 | ✓ | ✓ |
| 5913207 | ✓ | ✓ |
| 5913208 | ✓ | ✓ |
| 5913210 | ✓ | ✓ |
| 5913211 | ✓ | ✓ |
| 5913212 | ✓ | ✓ |
| 5913213 | ✓ | ✓ |
| 5913214 | ✓ | ✓ |
| 5913215 | ✓ | ✓ |
| 5913216 | ✓ | ✓ |
| 5913217 | ✓ | ✓ |
| 5913218 | ✓ | ✓ |
| 5913219 | ✓ | ✓ |
| 5913220 | ✓ | ✓ |
| 5913221 | ✓ | ✓ |
| 5913375 | ✓ | ✓ |
| 5913376 | ✓ | ✓ |
| 5913377 | ✓ | ✓ |
| 5913378 | ✓ | ✓ |
| 5913380 | ✓ | ✓ |
| 5913381 | ✓ | ✓ |
| 5913382 | ✓ | ✓ |
| 5913383 | ✓ | ✓ |
| 5913384 | ✓ | ✓ |
| 5913385 | ✓ | ✓ |
| 5913386 | ✓ | ✓ |
| Number of Pass | 33 | 33 |

PI 2-1: Attainability = 33/33 = 100.0% **Attainable**

PI 2-2: Attainability = 33/33 = 100.0% **Attainable**

**SO2 Conclusion**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PI** | **Attainability** | **Reason** | **Remedial Action** | **Action plan** | **Measurements** |
| 2-1 | ✓ | Collaborative work |  | Give more challenging design |  |
| 2-2 | ✓ | Collaborative work |  | Give more challenging design |  |

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SO7: An ability to acquire and apply new knowledge as needed, using

appropriate learning strategies.

PI 7-1 acquire and apply new knowledge

PI 7-2 use appropriate sources of knowledge

Homework **(Term1 2561)**: Weekly summarize of modern technologies (13 pieces per student)

(submitted by email)

| **Student No.** | **Q1: PI 7-1** | **Q1: PI 7-2** |
| --- | --- | --- |
| 5813342 | ✓ | ✓ |
| 5913197 | ✓ | ✓ |
| 5913198 | ✓ | ✓ |
| 5913200 | ✓ | ✓ |
| 5913201 | ✓ | ✓ |
| 5913203 | ✓ | ✓ |
| 5913204 | ✓ | ✓ |
| 5913205 | ✓ | ✓ |
| 5913207 | ✓ | ✓ |
| 5913208 | ✓ | ✓ |
| 5913210 | ✓ | ✓ |
| 5913211 | ✓ | ✓ |
| 5913212 | ✓ | ✓ |
| 5913213 | ✓ | ✓ |
| 5913214 | ✓ | ✓ |
| 5913215 | ✓ | ✓ |
| 5913216 | ✓ | ✓ |
| 5913217 | ✓ | ✓ |
| 5913218 | ✓ | ✓ |
| 5913219 | ✓ | ✓ |
| 5913220 | ✓ | ✓ |
| 5913221 | ✓ | ✓ |
| 5913375 | ✓ | ✓ |
| 5913376 | ✓ | ✓ |
| 5913377 | ✓ | ✓ |
| 5913378 | ✓ | ✓ |
| 5913380 | ✓ | ✓ |
| 5913381 | ✓ | ✓ |
| 5913382 | ✓ | ✓ |
| 5913383 | ✓ | ✓ |
| 5913384 | ✓ | ✓ |
| 5913385 | ✓ | ✓ |
| 5913386 | ✓ | ✓ |
| Number of Pass | 33 | 33 |

PI 2-1: Attainability = 33/33 = 100.0% **Attainable**

PI 2-2: Attainability = 33/33 = 100.0% **Attainable**

**SO7 Conclusion**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PI** | **Attainability** | **Reason** | **Remedial Action** | **Action plan** | **Measurements** |
| 7-1 | ✓ | Not difficult to attain |  | Keep it as is |  |
| 7-2 | ✓ |  |  |  |  |