



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

Sekolah Pendidikan Profesional dan  
Pendidikan Berterusan  
(UTMSPACE)

**FINAL EXAMINATION / PEPERIKSAAN AKHIR  
SEMESTER 2 – SESSION 2015 / 2016  
PROGRAM KERJASAMA**

COURSE CODE : DDPC 2673  
KOD KURSUS

COURSE NAME : DATA COMMUNICATION AND NETWORKING /  
NAMA KURSUS KOMUNIKASI DATA DAN RANGKAIAN

YEAR / PROGRAMME : 2 DDPC / 2 DDPZ  
TAHUN / PROGRAM

DURATION : 2 HOURS 30 MINUTES / 2 JAM 30 MINIT  
TEMPOH

DATE : APRIL 2016  
TARIKH

INSTRUCTION/ARAHAN :

- ANSWER ALL QUESTIONS.  
JAWAB SEMUA SOALAN.

( You are required to write your name and your lecturer's name on your answer script )  
( Pelajar dikehendaki tuliskan nama dan nama pensyarah pada skrip jawapan )

NAME / NAMA	:	.....
I.C NO. / NO. K/PENGENALAN	:	.....
YEAR / COURSE TAHUN / KURSUS	:	.....
COLLEGE NAME NAMA KOLEJ	:	.....
LECTURER'S NAME NAMA PENSYARAH	:	.....

This examination paper consists of ...12... pages including the cover  
Kertas soalan ini mengandungi .....12..... muka surat termasuk kulit hadapan

**SECTION A: SUBJECTIVE [100 MARKS]**  
**BAHAGIAN A: SUBJEKTIF [100 MARKAH]**

**INSTRUCTION : Answer all questions in the space provided.**

**Arahan : Jawab semua soalan pada ruang yang disediakan.**

1. List two(2) advantages and disadvantages of twisted pair cable, coaxial cable and fiber optical cable. **[12m]**  
*Senaraikan dua(2) kebaikan dan keburukan kabel terpiuh, kabel sepaksi dan kabel fiber optik.*

	Advantages/Kebalkan	Disadvantages/Keburukan
Fiber-Optic/ fiber optik		
Coaxial Cable/Kabel Sepaksi		
Twisted- Pair/ Kabel Terpiuh		

2. What is the significance of twisting in twisted pair cable? [4m]

*Apakah signifikan memintal kabel terpiuh?*

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3. Briefly explain of Kepler's laws and orbital aspect. [4m]

*Terangkan secara ringkas undang-undang Kepler dan aspek orbit.*

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4. Write the merits and demerits of following topology: [16m]

*Tulis kelebihan dan kekurangan topologi berikut:*

	<i>Merits/kelebihan</i>	<i>Demerits/kekurangan</i>
<b>a. Bus topology/ Topologi Bas</b>		

<b>b. Ring topology/ Topologi Cincin</b>		
<b>c. Star topology/ Topologi Bintang</b>		
<b>d. Mesh topology/ Topologi Mesh</b>		



7. Consider a binary sequence 1011111100 flow through a channel. For each method below, draw the wave of the digital to digital conversion.

*Pertimbangkan jujukan binari 1011111100 melalui satu saluran. Bagi setiap kaedah di bawah, lukis gelombang pertukaran digital ke digital.*

a) RZ

[3m]


b) NRZ\_I

[3m]


c) Manchester

[3m]


8. Two nodes A and B are using sliding window **Selective Repeat ARQ** protocol with 3-bit frame field and window size is 6. Assuming nod A is a sender and nod B is a receiver, draw the position window for nod A and nod B for each activities below. Activities (a) through (d) are interrelated.

*Dua nod A dan B menggunakan protokol ARQ Ulangan Memilih dengan 3 bit medan kerangka dan saiz tettingkap adalah 6. Andaikan nod A adalah penghantar dan nod B adalah penerima,*









10. Given the number of needed subnets is 14, the number of needed usable host is 14 and the network address is 192.10.10.0. Answer the following questions.

*Diberi bilangan subnet yang diperlukan adalah 14, bilangan hos yang diperlukan adalah 14 dan alamat rangkaian adalah 192.10.10.0. Jawab soalan berikut:*

a) What is the address class? [2M]

*Apakah alamat kelas?*

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b) What is the default subnet mask? [2M]

*Apakah topeng subnet lalai?*

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c) What is the custom subnet mask? [2M]

*Apakah topeng subnet custom?*

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d) Calculate number of bits borrowed. [2M]

*Kira bilangan bit yang dipinjam.*

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e) Calculate total number of host addresses. [2M]

*Kira jumlah bilangan alamat hos.*

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- f) Calculate number of usable addresses. [2M]  
*Kira bilangan alamat yang boleh digunakan.*

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- g) Calculate total number of subnets. [2M]  
*Kira jumlah bilangan subnet.*

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- h) Calculate the 4<sup>th</sup> subnet range. [2M]  
*Kira julat subnet ke 4.*

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- i) Calculate the subnet number for the 8<sup>th</sup> subnet. [2M]  
*Kira bilangan subnet bagi subnet ke 8.*

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- j) What is the subnet broadcast address for the 13<sup>th</sup> subnet? [2M]  
*Apakah alamat penyiaran subnet bagi subnet ke 13?*

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END OF QUESTIONS