KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
B.Sc. Engineering 3rd Year 2nd Term Examination, 2019
Department of Computer Science and Engineering
CSE 3201
Operating Systems

TIME: 3 hours FULL MARKS: 210

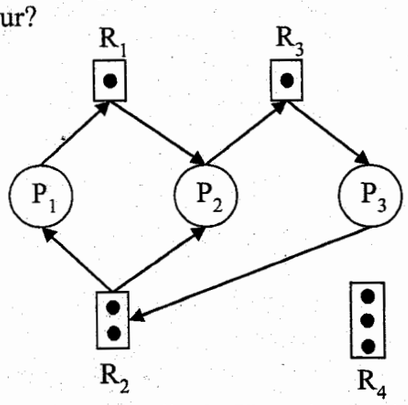
N.B. i) Answer **ANY THREE** questions from each section in separate scripts.
ii) Figures in the right margin indicate full marks.

SECTION A

(Answer **ANY THREE** questions from this section in Script A)

1. a) Define process in case of operating system. Why deadlock occurs in operating system? Specify the reasons. (07)

   b) Will there occur deadlock according to the resource allocation graph of the following figure? How the deadlock may occur? (07)



   c) Introduce the methods for handling deadlock. How deadlock prevention prevents the system from entering into deadlock? (10)

   d) Explain deadlock detection algorithm in case of resources with single instance. A system that uses Banker's-Algorithm for deadlock avoidance has five processes (1, 2, 3, 4, 5) and uses resources of four different types (A, B, C, D). Considering the following table. (11)

Process	Allocation				Max Request			
	A	B	C	D	A	B	C	D
1	1	0	2	0	3	2	4	2
2	0	3	1	2	3	5	1	2
3	2	4	5	1	2	7	7	5
4	3	0	0	6	5	5	0	8
5	4	2	1	3	6	2	1	4

Is the system in safe state? If your answer is yes, then show the safe sequence.
N.B. Total resources (A = 13, B = 13, C = 9, D = 13).

2. a) Suppose, a memory is partitioned into 6 fixed blocks of size 200, 400, 600, 500, 300, 250. There are 4 processes P_1, P_2, P_3, P_4 of size 357, 210, 468, 491 respectively. (10)
   i) Apply First fit, Best fit and Worst fit to store process in the memory. Also, mention the size of external fragmentation (if any).
   ii) Why Best fit performs best in case of fixed size partitioning?

   b) What is paging in operating system? Draw a block diagram showing how paging is used in memory management. What is the use of Translation Lookaside Buffer in case of paging? (10)

   c) Describe multilevel paging. Suppose, address space is 32 bits, page size is 4KB, page table entry size is 4B. How many bits are needed for addressing page tables and page offset? (10)

   d) What is the basic concept of inverted page table? How is it used in memory management? (05)

3. a) What is segmentation? Why segmentation and paging sometimes combined into one scheme? (08)

   b) What is garbage collection in general graph directory structure? Explain using a figure. (05)

   c) How free-space is managed in case of file system? Explain all the methods. (08)

   d) What is file system mounting? How mounting is used in Network File System (NFS)? Draw schematic view of NFS architecture. (14)

4. a) How a failure is detected in distributed environment? Explain. (05)

   b) Explain the most common connection strategies in distributed communication. (08)

c) Discuss the most common routing strategies in distributed communication with possible merits and demerits. (10)

d) Define distributed operating system. Explain how remote resources are accessed herein. (12)

SECTION B

(Answer **ANY THREE** questions from this section in Script B)

5. a) Why should you study operating systems? (09)
   b) How does system call pass parameters to operating systems? Explain. (10)
   c) Discuss Microkernel System Structure in details. (10)
   d) Define system call and system program with examples. (06)

6. a) What is starvation problem? How can it be solved? (07)
   b) An operating system uses Shortest Remaining Time First (SRTF) process scheduling algorithm. Consider the arrival times and burst times for the processes mentioned in the following table. (16)

Process	Burst Time	Arrival Time
P_1	20	1
P_2	25	15
P_3	10	30
P_4	15	65

   Calculate waiting time and turnaround time.
   c) Explain busy waiting in strict allocation method to achieve mutual exclusion. (12)

7. a) How does process is represented in Linux? (08)
   b) Describe different types of CPU scheduler. (09)
   c) "Process creation is heavy-weight while thread creation is light-weight". Is it true or false? Why? (10)
   d) Differentiate between concurrency and parallelism. (08)

8. a) Write down the advantages of partial loading. (06)
   b) Show the steps in handling a page fault with proper diagram. (12)
   c) Consider a reference string: 4, 7, 6, 1, 7, 6, 1, 2, 7, 2. The number of frames in the memory is 3. Find out the number of page faults respective to optimal page replacement algorithm and FIFO page replacement algorithm. Then compare their performances. (17)

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
B.Sc. Engineering 3rd Year 2nd Term Examination, 2019
Department of Computer Science and Engineering
CSE 3207
Applied Statistics and Queuing Theory

TIME: 3 hours FULL MARKS: 210

N.B. i) Answer **ANY THREE** questions from each section in separate scripts.
ii) Figures in the right margin indicate full marks.
iii) Necessary table/graphs/charts: Area under Normal curve, t Table, Chi-Square distribution

SECTION A

(Answer **ANY THREE** questions from this section in Script A)

1. a) How do probability and statistical inference work together? (08)
b) If S^2 is the variance of a random sample of size n. Show that (09)

$$S^2 = \frac{n\sum_{i=1}^{n} X_i^2 - (\sum_{i=1}^{n} X_i)^2}{n(n-1)}$$

c) A medical doctor wants to reduce blood sugar level of all his patients by altering their diet. He finds that the mean sugar level of all patients is 180 with a standard deviation of 18. Nine of his patients start dieting and the mean of the sample is observed to 175. Now, he is considering to recommend all his patients to go on a diet. (He calculates 99% confidence interval) (12)
   i) What is standard error of the mean?
   ii) What is the probability of getting a mean of 175 or less after all the patients start dieting?
   iii) Decide whether or not the doctor has enough evidence that dieting reduces blood sugar level.

d) Define tolerance limits and prediction interval. (06)

2. a) How does R^2 explain the fit of the regression model? (05)
b) The frequency distribution of battery lives is approximately by a normal distribution with mean $\mu = 3.5$ and standard deviation $\sigma = 0.7$. The expected frequencies are obtained by computing the areas under the hypothesized normal curve that fall between the various class boundaries. Decide whether or not the normal distribution provides a good fit for the distribution of battery lives using chi-square test. (15)

Class Boundaries	1.45-1.95	1.95-2.45	2.45-2.95	2.95-3.45	3.45-3.95	3.95-4.45	4.45-4.95
Observed Frequency	2	1	4	15	10	5	3

c) A machine produces metal pieces that are cylindrical in shape. A sample of these pieces is taken and the diameters are found to be 1.01, 0.97, 1.03, 1.04, 0.99, 0.98, 0.99, 1.01 and 1.03 centimeters. For all computations, assume an approximately normal distribution. (10)
   i) Find a 99% confidence interval on the mean diameter.
   ii) Compute a 99% prediction on a measured diameter of a single metal piece taken from the machine.

d) The KUET administration is curious if they should build another cafeteria. They plan to survey a sample of their students to see if there is strong evidence that the proportion interested in a meal plan is higher than 40%, in which case, they will consider building a new cafeteria. Let p represents the proportion of students interested in a meal plan. Here are the hypotheses they will use: (05)

$H_0 : p \leq 0.40$
$H_a : p > 0.40$

What would be the consequence of a Type II error in this context?

3. a) Differentiate between underfit and overfit of a model. (05)
b) Prove Chebyshev's Inequality. A biased coin is flipped 200 times consecutively, and comes up heads with probability 1/10 each time it is flipped. Find the probability that it will come up heads at least 120 times. (10)

c) Measure rank correlation coefficient between the following two variables. (10)

X	20	22	28	23	30	30	23	24
Y	28	24	24	25	26	27	32	30

d) Derive the maximum likelihood estimator of a Poisson parameter. (10)

4. a) Illustrate Regression to the Mean (RTM) with proper diagram. (10)
   b) Measure the goodness of fit of a regression model using coefficient of Determination and make comments on the fit where the model = $3.83 + 0.91x$ (10)

X	37	37.5	38.3	39.7	39	38.5	40	40.3	41.5	42
Y	31	36.5	38	37	36	45	38.3	41	40	44

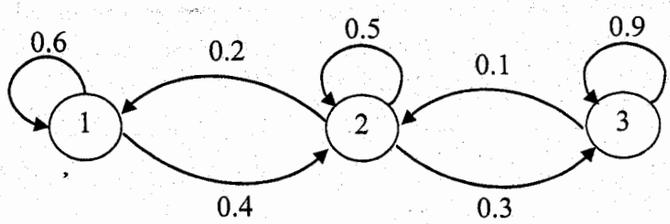
c) "The confidence interval is the probability that the population mean lies within that interval"- Decide whether or not the above statement is correct and justify your answer with proper example. (10)

d) Differentiate between Pearson's correlation coefficient and Spearman's correlation coefficient. (05)

SECTION B

(Answer **ANY THREE** questions from this section in Script B)

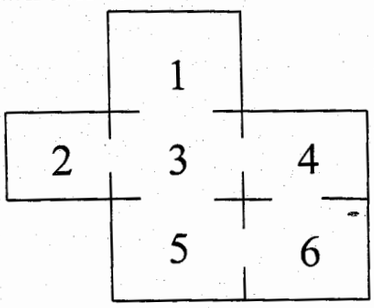
5. a) Explain Markov Chain with example. Write about the significance of the order in Markov Chain. (05)
   b) A reluctant gambler is dragged to the riverboat casino by his more free-wheeling friends. He takes only \$50 to gamble with since he does not know that much about gambling, he decides to play roulette. At each spin, he places \$25 on red. If red occurs, he wins \$25. If black comes up, he loses his \$25. He will quit playing when he either has zero money left or has \$75 total. Draw transition graph and matrix from this statement. (08)
   c) Derive the Chapman-Kolmogorov equation for discrete time Markov Chain. (10)
   d) Consider, a Markov chain $\{X_n ; n = 0,1, \ldots\}$, specified by the following transition diagram. (12)



i) Given that the chain starts with $X_0 = 1$, find the probability that $X_2 = 2$

ii) Find the steady-state probabilities π_1, π_2, π_3 of the different states.

6. a) Write short notes on Embedded Markov Chain. (05)
   b) A rat runs through the maze shown below. (10)



At each step it leaves the room it is in by choosing at random one of the doors out of the room.

i) Find the Transition matrix P for the problem.

ii) Show that it is irreducible but not aperiodic.

c) Define stochastic process and random walk. (04)

d) What properties a Markov Chain must have to be communicative? Describe with example. (06)

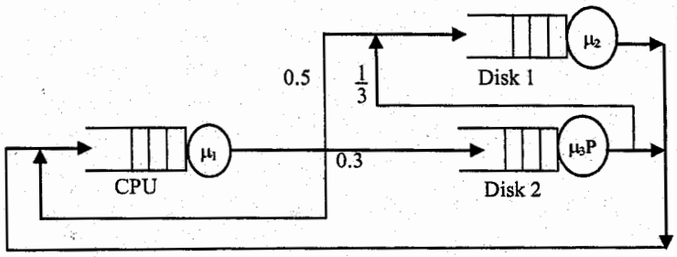
e) Glaucoma is a disease of the eyes that usually occurs in old aged patients. Its progression can be modeled as a continuous time Markov Chain with 3 states, X = 0 (Mild), X = 1 (Severe) (10)

and X = 2 (Blindness). Transition from X = 0 to X = 1 with a rate λ_1, from X = 1 to X = 2 with a rate λ_2 and from X = 2 to X = 1 with a rate λ_3. Show that steady state value for state, X = 1 is equivalent to $\lambda_3/(\lambda_2 + \lambda_3)$.

7. a) Explain Birth-Death process. Given states 1 and 2; birthrate = 0.4 and death rate = 0.3, Show the transition diagram and find the value of $P(X_{200} = 1, X_{201} = 2 \mid X_0 = 1)$ (10)
   b) Define the categories of Queuing Model with Kendall's notation. (05)
   c) Derive equation of the expected length of the system, L_s for M/M/1: N/∞ Model. If arrival rate, λ = 8/hr, Service rate, μ = 9/hr. Finite length of the Queue, N = 10. Find the average waiting time, W_q for M/M/1: N/∞ Model. (20)

8. a) In KUET, Students have to deposit registration fees in Janata Bank. Assuming the bank has only one counter, the queue length is ∞ and there are ∞ number of students in KUET, what is the probability of (10)
      i) No queue in the line.
      ii) Less than 10 people in the queue if every hour 30 students come to the bank and 36 students get their work done.

   b) What are the impacts of distribution in arrival and service rate in case of M/M/1, M/G/1 and M/D/1 models? (05)
   c) Consider a simple file server system shown in the following figure that consists of a CPU, and two disks (disk1, disk2). Labels of the arrows in the figure shows the routing probabilities of the jobs. There are always four jobs in the system. The mean time to complete CPU operation for a job is 0.05 seconds. The mean time to complete disk1 and disk2 operation is 0.125 and 0.2 second respectively. What is the probability that the CPU is busy? (15)



   d) In the queuing model having finite queue length, what type of Balking will occur? Give explanation. (05)

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
B.Sc. Engineering 3rd Year 2nd Term Examination, 2019
Department of Computer Science and Engineering
CSE 3211
Compiler Design

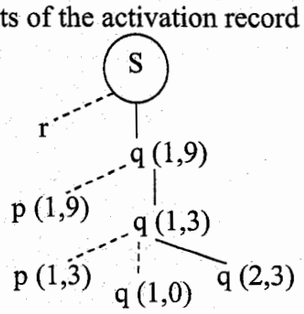
TIME: 3 hours FULL MARKS: 210

N.B. i) Answer **ANY THREE** questions from each section in separate scripts.
ii) Figures in the right margin indicate full marks.

SECTION A

(Answer **ANY THREE** questions from this section in Script A)

1. a) "Compiler acts as a translator"- Justify the statement with appropriate example. (10)
   b) Write a program in flex to detect a floating point number of the forms .65, 28.73 and 46.3E+8 (10)
   c) Define activation tree and activation record with example. What is the role of control stack for an activation tree? Show the contents of the activation record for the control stack q (2,3). (15)



2. a) Divide the following program into appropriate lexeme. (05)
   float LSquare (x) { return (x <= -10 || x >= 10)? 100 : x*x;
   b) Define ambiguity of a grammar. Show that following grammar is ambiguous. (08)
   S→ if E then S | if E then S else S
   c) When is a grammar left recursive? Show that following grammar is left recursive. Eliminate left recursion from the grammar. (07)
   $A \rightarrow A + B \mid B$ $B \rightarrow C * D \mid D$ $D \rightarrow id$
   d) Consider the following CFG for data type declaration of a programming language – (15)
   TYPE → SIMPLE | id | array [SIMPLE] of ~~type~~ TYPE
   SIMPLE → integer | char | num dotdot num
   Where Nonterminal : ~~TYPE~~, SIMPLE
   Terminal : id, array, of, type, integer, char, num, dotdot
   i) Calculate the FIRST and FOLLOW set.
   ii) Construct the Predictive Parsing table.
   iii) Show the movement by the parser for the input "array [num dotdot num] of integer".

3. a) How do you calculate the substring to be replaced at each reduction step for a Shift reduce parser? Explain. (10)
   b) What is the general configuration for a LR Parsing algorithm? Explain the contents of the configuration for each actions of LR Parser. (10)
   c) What are the conflicts during shift reduce parsing? (05)
   d) Consider the following grammar (10)
   $E \rightarrow E + T \mid T$ $T \rightarrow T * F \mid F$ $F \rightarrow id$
   Find the canonical LR(0) items for the grammar. Hence, draw the DFA of GOTO function.

4. a) Define intermediate code. Represent the following statement into intermediate code: (10)
   x [i] = y and x = y [i]
   b) Generate the semantic rule for a while statement of the form (10)
   $S \rightarrow while\ E\ do\ S_1$
   Hence, generate the three address code for the following code segment
   while (a < b or c < d) do
   i = i + 1;
   c) Let A be a 3 dimensional array of size 10×20×30 where Low1 = Low2 = Low3 = 0 and base = 100. Develop the three address code for x = A [i] [j] [k]. (10)
   d) How can you reuse temporary names? (05)

SECTION B

(Answer **ANY THREE** questions from this section in Script B)

5. a) Differentiate between one pass and multi pass compiler. (05)
   b) Differentiate a CFG with a Parse tree. (07)
   c) Consider the following grammar (15)

$$expr \rightarrow + \; expr \; term \mid - \; expr \; term \mid term$$
$$term \rightarrow * \; term \; factor \mid / \; term \; factor \mid factor$$
$$factor \rightarrow digit \mid (expr)$$

   i) Write down the syntax directed definition for the grammar above.
   ii) Draw the annotated parse tree for the input " -*(+4539"
   d) Construct a CFG to explain the following terms. (08)
   i) Ambiguity of grammar ii) Associativity of operators.

6. a) Construct the Directed Acyclic Graph (DAG) for the following expression: (07)

$$a + a * (b - c) + (b - c) * d + a$$

   b) What is type system? When do you need dynamic checking? (08)
   c) Consider the following declaration: (15)

```
struct cell {
        int info;
        struct cell *next;
} cell K [20];
```

   i) Write the type expression for the types of K.
   ii) Represent the type expression with a DAG.
   d) What is Coercions? Explain with examples. (05)

7. a) Suppose a particular machine requires register pairs (an even and next odd numbered register) for integer multiplication and division. The even register contains the value of the operand (operand denotes multiplicand or dividend). The instruction has the following format: (08)

OP Source, Destination

Now consider the following three address code:

$t := a + b$
$t := t * c$
$t := t / d$

Generate optimal machine-code sequences for the above three-address code.

   b) Calculate the cost of the following instructions: (12)

i) LD R_0, R_1
MOV R_0, M
ADD 4(R_0), M

ii) MOV A, B
ADD 4(R_0), *12(R_1)

iii) MOV #140, R_0
SUB 14(R_0), *R_2

   c) Consider the following code segment: (15)

/* code for s */	/* code for p */	/* code for q */
action 1	action 3	action 4
call q	return	call p
action 2		action 5
halt		return

The code for these procedures starts at addresses 150, 250, 350 respectively. The stack starts at 550 and each instruction takes 18 bytes. Show the stack allocation when the target code is produced.

8. a) Define basic block. Construct basic blocks from the following three-address code: (20)

1) i = 1
2) j = 1
3) $t_1 = 10 * i$
4) $t_2 = t_1 + j$
5) $t_3 = 8 * t_2$
6) $t_4 = t_3 - 88$
7) a[t_4] = 0.0
8) j = j + 1
9) if j <= 10 goto (3)
10) i = i + 1
11) if i <= 10 goto (2)
12) i = 1
13) t_5 = i -1
14) $t_6 = 88 * t_5$
15) a[t_6] = 1.0
16) i = i + 1
17) if i <=10 goto (13)

Now optimize the basic blocks by applying the following terms: (i) Common Sub-expression elimination (ii) Copy Propagation (iii) Dead Code Elimination (iv) Reduction in Strength.

   b) Explain following transformation on basic block with proper example. (08)
   i) Structure preserving transformation.
   ii) Algebraic transformation.
   c) What is Peephole optimization? Write down the characteristics of this optimization. (07)

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
B.Sc. Engineering 3rd Year 2nd Term Examination, 2018
Department of Computer Science and Engineering
CSE 3211
Compiler Design

TIME: 3 hours FULL MARKS: 210

N.B. i) Answer **ANY THREE** questions from each section in separate scripts.
ii) Figures in the right margin indicate full marks.

SECTION A

(Answer **ANY THREE** questions from this section in Script A)

1. a) What are the phases of compiler? Translate the following statement into different phases (12)
position = value + rate ×75%.
b) Write a program in flex to detect to detect a floating point number of the form 426.52 and 46.2E+5. (08)
c) Define activation tree and activation record. Explain with example. (07)
d) "If a and b are procedure activations, then their lifetimes are either non-overlapping or nested"-justify the statement with example. (08)

2. a) What do you mean by ambiguity of grammar? Show that following grammar is ambiguous- (10)
S→if E then S|
if E then S else S
b) Why do you need a grammar to be left factored? Apply the idea of left factoring with the following grammar (10)
A→abB | aB | cdg | cdeB | cdfB
c) Consider the following grammar. (15)
S→iCtSE | a
E→eS | ε
C→b
(i) Find the FIRST and FOLLOW set, (ii) Construct the LL(1) parse table, and (iii) Do you think the above grammar is a LL(1) grammar? Explain your answer.

3. a) What is the general configuration of a LR parsing algorithm? Explain the actions of LR parser. (09)
b) Consider the following grammar- (18)
E→E + T
T→T * F
F→id
(i) Define closure and goto operation with example, (ii) Find the canonical LR(0) items of the grammar, and (iii) Construct the SLR parsing table of the grammar.
c) What is the handle for shift reduce parser? Consider the grammar (08)
E→E + T | T
T→T * F | F
F→(E) | id
and the input is id + id * id. Find the handles for right sentential form.

4. a) Define intermediate code. Represent the following statements into intermediate code. (08)
`x[i] = y and x = y[i]`
b) Generate the semantic rule for while statement of the form S→while E do S_1 and hence generate the three address code for the following code segment. (12)

```
i = 2 * n + k;
while i do
i = i - k;
```

c) Let A be a 3 dimensional array of size 10×20×30 where $Low1 = Low2 = Low3 = 0$ and $base = 100$. Develop the three address code for X = A[i][j][k]. (10)
d) What is the address code of a<b? (05)

SECTION B

(Answer **ANY THREE** questions from this section in Script B)

5. a) Differentiate between one-pass and multi-pass compiler. (06)
b) Consider an arithmetic expression (represented in infix notation) of integers and identifiers with the four binary operators +, -, *, /. Now construct an unambiguous grammar to evaluate the expression. Also verify your grammar with an input string that contains all the operators (09)

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
B.Sc. Engineering 3rd Year 2nd Term Examination, 2019
Department of Computer Science and Engineering
CSE 3217
Mobile Computing

TIME: 3 hours FULL MARKS: 210

N.B. i) Answer **ANY THREE** questions from each section in separate scripts.
ii) Figures in the right margin indicate full marks.

SECTION A

(Answer **ANY THREE** questions from this section in Script A)

1. a) What is mobile computing? List the many other names which are compatible with mobile computing. (07)
   b) "A close relationship of mobile apps and wireless communication is the fundamental to mobile computing"- Justify the statement. (08)
   c) What are the mobility constraints of smart devices? Explain them clearly. (10)
   d) What are current challenges of mobile computing? Explain how to cope with these challenges. (10)

2. a) Why do you use baseband processors in mobile phones? Explain the typical baseband processor structure clearly. (10)
   b) What are ARM processors? Classify different ARM processors and explain the general register sets of it. (13)
   c) "To augment your everyday experiences by super imposing a layer of visual indicators directly onto your field of vision"- Explain this Google glass project aim using your own example. (12)

3. a) What do you mean by UI and UX design for a mobile device? Explain the guidelines for designing good UIs. (10)
   b) What do you mean by usability? Explain the usability app design principles for mobile devices. (10)
   c) What is Context-aware Computing? Why do you need it in mobile computing? Explain it using example(s). (10)
   d) Draw the architecture of Context-aware System. (05)

4. a) What is Android? Draw the Android architectural layers and explain the functions of each layer. (10)
   b) Explain the processes for mobile app design using augmented reality. (10)
   c) "Resources are scarce in mobile platform"- Justify the statement. (10)
   d) Discuss the iOS security features clearly. (05)

SECTION B

(Answer **ANY THREE** questions from this section in Script B)

5. a) What is the significance of Ad hoc networks over Infrastructure based networks? Discuss briefly. (06)
   b) How WSN can be applied in military and health sectors? (10)
   c) Point out the characteristics of WSNs. (06)
   d) A set of sensor nodes are spread in KUET campus. The number of nodes are 100 and the area under coverage is 101 acres. How would you acquire location information from these sensor nodes using WSN? (13)

6. a) What is Zigbee protocol & Zigbee alliance? (10)
   b) How would you apply Zigbee to automate In-Home patient monitoring? (10)
   c) Why should we choose Zigbee over Bluetooth & Wi-Fi? (05)
   d) Draw the LR-WPAN topology and discuss briefly. (10)

7. a) What is VANET? Point out the characteristics of VANET. (10)
   b) How DSRC technology works? Explain briefly. (10)
   c) What are the limitations of IEEE 802.11p in broadcast communication? (10)
   d) Draw the Zigbee network topology with proper notation. (05)

8. a) What is NGN? Draw the architecture of NGN and write a short note on it. (10)
   b) Define technological convergence. Explain the concept of convergence with proper figure. (10)
   c) Discuss about the impact of convergence on markets. (07)
   d) In a converged media environment, how would you provide protection to user rights? How can you prevent events like "Facebook-Cambridge Analytica Data Scandal"? (08)

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
B.Sc. Engineering 3rd Year 2nd Term Examination, 2019
Department of Computer Science and Engineering
HUM 3227
Professional Ethics and Moral Thoughts

TIME: 3 hours FULL MARKS: 210

N.B. i) Answer **ANY THREE** questions from each section in separate scripts.
ii) Figures in the right margin indicate full marks.

SECTION A

(Answer **ANY THREE** questions from this section in Script A)

1. a) "Ethics is a way of understanding and examining what is right and what is wrong"-do you agree with this statement? Explain this statement with relevant example. (10)
   b) Narrate six key pillars of ethics with example from your own country. (15)
   c) Discuss key reasons why people act unethically. (10)

2. a) Explain importance of understanding ethics. (05)
   b) Narrate different types of ethics with example from your real life. (15)
   c) Explain the importance of studying professional ethics for the students of CSE in the light of your own country. (15)

3. a) Discuss ethical principles and code of conduct for psychologists. (20)
   b) What is meant by morality? Distinguish between morality and ethics. (05)
   c) Discuss steps of making moral decision. (10)

4. a) What do you mean by religion? Explain relation between ethics and religion. (10)
   b) Critically explain 'ethical egoism' with relevant example. (15)
   c) Discuss ethical values for CSE professionals in the light of your own society. (10)

SECTION B

(Answer **ANY THREE** questions from this section in Script B)

5. a) Define morality. (05)
   b) Describe the nature of human behavior. (10)
   c) What are the bases of human behavior? Explain it with example. (20)

6. a) Explain Khalberg's stages of moral development. (20)
   b) Define moral reasoning. Explain Jean-Piaget's contribution to the field of moral reasoning. (15)

7. a) What do you mean by moral rights and duties? (05)
   b) Make a different between moral duties and legal duties. (10)
   c) How does major social institution influence our morality? (20)

8. a) Differentiate between occupation and profession with example. (05)
   b) Discuss relation between occupational culture and ideology. (10)
   c) Define stress. Explain different types of stress and its extreme forms with example. (20)