

Reg. No. _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER B.TECH DEGREE EXAMINATION, MAY 2017

HS 210: LIFE SKILLS

Max. Marks: 50

Duration: 2 Hours

PART A

Answer all questions.

1. (a) Suppose you are working in a well-reputed aerospace company at Industry-University Relation Department and you are in charge of internship offerings to college students. A student has sent you a request to change the internship dates allotted for them due to the schedule of their internal exams at college.
 Compose an e-mail to the student informing the difficulty to change the dates and to do arrangements in their college itself. (4)
- (b) Identify the communication network related to each of the following situations.
 - (i) A film star interviewed by an interviewer
 - (ii) Teachers, conveying instructions to students, discussed in Principal's meeting.
 - (iii) Software Engineers' discussion to select a website layout.
 - (iv) Communication between a boss and his/ her subordinate. (2)
2. (a) Identify which of the following problems on solving require convergent thinking and which require divergent thinking.
 - (i) What happens when the air we breathe is green in colour?
 - (ii) Solve $(x^2 + x^3 + x^4)(x^4 + 2x^3 + 3x^4 + 4x^5) = 0$.
 - (iii) What about the computers in year 2080?
 - (iv) Possibility of a World War for food. (2)
- (b) You were asked to collect details about any one of your friend using mind mapping technique, so that you will be able to remember the details. Prepare a mind map drawing for the requirement. (4)
3. Two Professors initiated to give an engineering design task based on their course and decided to team students based on their CGPA. Professor A teamed his students such that students having same CGPA form one team. Professor B teamed his students as each team contains students having different range of CGPA values.
 - (i) Out of these teams identify heterogeneous & homogeneous teams.
 - (ii) By which teaming, a better outcome is expected.
 - (iii) How heterogeneous & homogeneous teams differ from each other? (6)
4. Explain moral reasoning development over different stages according to Kohlberg's theory. (6)
5. (a) Match the given phrases to the correct leadership styles. (3)

Affiliative	<i>Try to do this</i>
Authoritative	<i>People come first</i>
Coaching	<i>Do what I know</i>
Coercive	<i>What do you think?</i>
Democratic	<i>Come with me</i>
Pace Setting	<i>Do what I tell</i>

- (b) How transactional leadership and transformational leadership differs each other?
(3)

PART B

6. *Read the article and answer the questions given below.*

It occurred on the night of 2–3 December 1984 at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, Madhya Pradesh. Over 500,000 people were exposed to Methyl Isocyanate (MIC) gas and other chemicals. A runaway reaction had occurred in a storage tank of Methyl Isocyanate (MIC), which was used to manufacture a pesticide. The valves of the tank had burst, and a cloud of poisonous gas had escaped. The winds carried it to nearby shanty towns and the populous city of Bhopal, where thousands of people either died in their sleep or woke and died while fleeing. Those who survived suffered from burning eyes and lungs. Local medical facilities were not equipped for the disaster, and over the next few weeks thousands more died.

The killer gas spread through the city, sending residents scurrying through the dark streets. No alarm ever sounded a warning, so that local people were not informed the situation, and no evacuation plan was prepared. When victims arrived at hospitals breathless and blind, doctors did not know how to treat them, as UCIL had not provided emergency information.

Perhaps most importantly at the time of the tragedy, the staff did not realize the gravity of the situation and even took a break for tea after the leak had been noticed, thinking they would have plenty of time to fix it. The operator in the control room did not notify his supervisor when the temperature began to rise inside the tank and the entire situation remained unattended for at least an hour.

The disaster raised some serious ethical issues. The pesticide factory was built in the midst of densely populated settlements. UCIL chose to store and produce MIC, one of the most deadly chemicals (permitted exposure levels in USA and Britain are 0.02 parts per million), in an area where nearly 120,000 people lived.

The MIC plant was not designed to handle a runaway reaction. When the uncontrolled reaction started, MIC was flowing through the scrubber (meant to neutralize MIC emissions) at more than 200 times its designed capacity.

- (i) Do you think UCIL is responsible for the disaster? Why? (4)
- (ii) Discuss the communication failures occurred in the case resulting in the tragedy. (4)
- (iii) As an engineer, comment on the drawback of the design which may have the reason for the tragedy. (4)
- (iv) What are all the ethical issues involved in the case? (4)
- (v) “The pesticide factory was built in the midst of densely populated settlements”. Analyze and comment on this statement. (2)
- (vi) Imagine you were in the engineering design team of this plant. What could you have altered the design in concern with safety? (2)
