



COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Government of Maharashtra.)
SHIVAJI NAGAR, PUNE - 411 005

END Semester Examination

(ML-101) Professional Ethicss

Course: B.Tech

Branch: Applied Science

Semester: Sem I

Year: 2014-2015

Max.Marks:60

Duration: 3 Hours Time:- 10:00 AM - 01:00 PM

Date: 19. 11. 2014

Instructions:

MIS No.

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1. Figures to the right indicate the full marks.
2. Mobile phones and programmable calculators are strictly prohibited.
3. Writing anything on question paper is not allowed.
4. Exchange/Sharing of anything like stationery, calculator is not allowed.
5. Assume suitable data if necessary.
6. Write your MIS Number on Question Paper

SECTION – I

Answer ONLY TWO questions in this section

(If you answer more than two questions, strike out the answer you don't want to be evaluated)

Q1. Carefully, read the case given below and answer the questions that follow:

It was about two years ago that I first saw it in a corner of the Boat Club Canteen at COEP. It was a large wooden drop-box with a tag that announced that *SWaCH Pune Seva Sahakari Sanstha Ltd.* had placed it there for collecting e-waste. The lock was broken, and when I opened the shutter, it turned out to be a veritable 'Pandora's Box' from which tumbled out broken badminton racquets, old thermocole sheets, and almost anything, *but* electronic waste!! I asked people around me – students, teachers, almost anybody I met – whether they knew what the box was for. None really knew or cared. I called up SWaCH many times requesting them to pay a visit to our college, and make a presentation on the subject, at least to the First Year students for whom the hazard of e-waste forms part of the syllabus of *Professional Ethics*. Each time I called, the response was evasive.

However, it must be said to the credit of SWaCH that after many phone calls, their representative did eventually visit our campus one day. I explained the situation to her. She was enthusiastic, and promised to do something. She even asked for and was given a stall at the Mind Spark Festival to spread awareness about e-waste disposal among the staff, students and others. Unfortunately, the footfall at her stall was almost zero. Still, we did not give up. SWaCH provided us with four very attractive bins to collect e-waste, which the students enthusiastically placed at four strategic locations in the campus. Sadly, it is also true that after installing the bins in our campus, SWaCH has never visited us again to take away, for scientific disposal, the e-waste collected in them. Over a period of time it was gratifying to see that some people actually used these bins for the purpose they were meant. But at the same time, some others continued to misuse the bins by dumping all kinds of trash like waste paper, food waste from the canteens, wrappers of wafers and other eatables in them. It was impossible to find out who was doing this and e-mails to educate people also had no effect.

On Gandhi Jayanti Day, this year, our college actively participated in the Prime Minister's *Swachha Bharat Abhiyan*. A few students decided to clean up the e-waste bins and empty them of all the unwanted trash, retaining therein only what legitimately qualified as e-waste. This, however, was only a small first step and a lot more still needs to be done to ensure that these bins are not misused. We must urgently find a way out of this apathy, on our part towards proper disposal of even something as seemingly innocuous as used battery cells, which we so carelessly throw into common dustbins or even on the roadside.

Questions

- (a) Explain briefly what you, as a student of *Professional Ethics*, have learnt about the hazard of electronic waste. Also explain what should be the role of groups like SWaCH in the e-waste disposal process. What would you do to ensure that SWaCH performs this role satisfactorily? (5 marks)
- (b) What initiative would you take to spread awareness of e-waste disposal among the students and others in your campus? How would you carry on this work on a long term basis? Would you face any difficulties in carrying out this work on a long term basis and how would you remain committed to succeed in your mission? (5 marks)
- (c) What steps would you take to educate people in our campus about their social responsibility towards proper use of these e-waste collection bins? Can you suggest better locations for these bins to ensure more effective usage? (5 marks)

Q2. The following news item appeared in the newspapers some time ago. Read the news and answer the questions that follow it:

Pune techie tries to hack into tiger's digital collar in Madhya Pradesh

Bhopal: In a first of its kind case, a cyber-expert based in Pune tried to hack into the digital collar of a tiger in Madhya Pradesh to track the movements of the big cat. The incident prompted authorities at the Bori-Satpura tiger reserve to seek registration of an FIR with a view to a detailed probe into the case. The matter was discussed during a meeting in Bhopal between senior officials of the Madhya Pradesh wildlife department and the Wildlife Institute of India (WII). According to the minutes of this meeting, the collar put on the roughly three-year-old tiger by WII officials, stopped working soon after it was hacked. The tiger was being followed using a 'camera trap'. Senior officials have been directed to keep track of the tiger continuously for the next six months. Besides, it was decided that the Iridium collar on the tiger would be replaced by a new Very High Frequency (VHF) collar after it acclimatizes to the new environs in Satpura reserve.

The collar is still stuck around the tiger's neck and will be sent to WII, Dehradun, to find out the reason why it malfunctioned, officials said. "It is a very serious matter. For the first time, a techie has tried to hack a tiger's collar. We want a detailed probe into the matter," said a wildlife activist in Bhopal. Six tiger reserves in Madhya Pradesh - Bandhavgarh, Kanha, Panna, Bori-Satpura, Sanjay Dubri and Pench - contain about 257 big cats. The tiger population in the country was estimated to be 1,706 as per data collected in 2010. As many as 58 tigers have died in the past five years due to poaching, territorial fights and old age in the six big cat habitats in Madhya Pradesh.

Questions

- a) What is meant by *hacking* in relation to cyber technology? Can *hacking* be ethical? Do you think that the techie's action may be a case of *ethical hacking*? Why do you think so? (5 marks)
- b) In the context of the above passage, what is meant by the term "*poaching*"? Can poaching of tigers be called "ethical"? Give reasons for your answer. (5 marks)
- c) Apart from *cyber crime* do you think there may be ethical issues of environmental sustainability also involved in the above story? Explain with reasons. (5 marks)

Q3. Read the case narrated below and answer the questions that follow:

Some children were playing near two railway tracks; one still in use and the other disused. Only one child played on the disused track, the rest played on the operational track. A train came along while you were just beside the track interchange. You could make the train change its course to the disused track and thus save most of the children. However, if you did this, it would mean that the lone child playing on the disused track would be sacrificed. On the other hand, if you allowed the train to continue on its original course, many more children would lose their lives. Normally, saving most of the children by sacrificing only one child might seem to be the most rational thing to do. But, if you pause to think, the child who chose to play on the disused track had, in fact, made the right decision to play in a safer place than the others.

The lone child on the disused track would surely die if you diverted the train's course, even though he was right in avoiding the track normally taken by the train. Moreover, there might be reasons why that particular track had been in disuse over many years. These reasons might make running a train on that track unsafe too.

Life is full of tough decisions that need to be made. A right decision in a given situation may not be always popular and a popular decision may not be the right one.

Questions

- (a) Does the above situation represent an ethical dilemma? Explain with reasons. What would be the various thoughts coming to your mind when facing this situation? (5 marks)

- (b) Could there be a reason like passenger safety for one of the tracks not being used? Explain why you think so. (5 marks)
- (c) In these circumstances, ^{what} would be your decision? What action would you take to try and save the maximum possible lives? (5 marks)
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SECTION – II

Answer ONLY THREE questions in this section

(If you answer more than three questions, strike out answers you don't want to be evaluated)

Q4. Complete the following statements by choosing the correct alternatives from those given in brackets: (10 marks)

- a. Appropriate technology is a kind of _____ (*primitive/ indigenously developed/ imported technology*).
- b. The stone age implement and the modern day microchip represent _____ (*different types of technology/ the same type of technology*).
- c. Simple technology is a _____ (*capital intensive/ labour intensive/ highly sophisticated*) technology.
- d. Appropriate technology is _____ (*environmentally unsustainable/ eco-friendly/ opposed to social justice*).
- e. Technology transfer usually takes place _____ (*from a licensee to a licensor/ from a licensor to a licensee/ between two underdeveloped countries/ between two engineering students*).
- f. Intellectual property refers to _____ (*property that is always held in physical form/ creations of the mind/ disputed property*).
- g. According to Richard Stallman, _____ (*software piracy should be legally allowed/ software should be owned by its creator/ information should be freely available to all people*).
- h. Not paying for using copyrighted software _____ (*is full of advantages/ is in line with the developer's IPR/ is an infringement of the developer's IPR*).
- i. Patents, trademarks, and copyrights protect creators the of _____ (*industrial land and buildings/ engineering materials/ inventions, literary works, films, etc.*) from theft or misuse of their work.
- j. When using software that is not copyrighted, it is ethically necessary to _____ (*pay a fee to the software company/ refrain from acknowledging its author and source/ pass it on as one's own work/ acknowledge the source of information*).

Q5. A student was overheard commenting, "Seriously, Professional Ethics is a useless subject. Aren't we all grown-ups? We don't need someone to tell us what is good and what is bad or what our social responsibilities are." Write a note to this student explaining to him what, according to you, is the objective behind introducing a course on Professional Ethics in your college? (10 marks) (10 marks)

Q6. What is meant by alternative sources of energy? Explain with examples why it is an ethical responsibility of engineers to conserve energy. (10 marks)

Q7. What is meant by *transfer of technology*? Is it always an advantage to import high technology from more developed countries? Explain with ethical reasoning. (10 marks)

Q8. Write short notes on *any TWO* of the following: (10 marks)

(a) *3 Ps of Environmental Ethics*

(b) *Hazards of e-waste*

(c) *Appropriate Technology*

(d) *Peak Oil Level versus Perpetual Exponential Quantitative Growth*

Q9. What is *intellectual property*? Give examples and explain why they are treated as “property”. Is it always ethical to use or copy software without paying for it? Give reasons. (10 marks)