Reading 1

The Central Processing Unit of the laptop computer you use on a daily basis resides in a thin silver of silicon,about one square centimeter in area. This small chip contains over 100,000,000 silicon MOSFETs-some type of tiny transistors-each about a thousand times smaller than the diameter of a human hair!

The slender computer that you nonchalantly stuff into your backpack has more computing power than a vacuum-tube computers that occupied an entire room 50 years ago. when you answer an incoming call on your cell phone, you may wonder inside your sleek ‘mobile’. If you opened it up, and knew where to look, you’d find some HBTs-Heterojunction Bipolar Transistors. These transistors operate at the high frequencies required for local-area-network telecommunications, and they can deliver the power necessary for the transmission of signals.

Of course, a cellphone nowadays is no longer just a replacement for those clunking, tethered, hand-sets of not so long ago;it is also a camera and a juke box. The immense storage requirements of these applications are met by flash memory, comprising more millions of silicon MOSFETs. Your cell phone is really a PDA –Personal Digital Assistant –and probably also allows internet access, in which case you may wonder how signals from around the globe find their way into our machine. Somewhere in the communications chain there’s probably a low-noise amplifier to receive tiny signals and not add undue noise to them. HBTs are good for this, but even better are HEMTs –High Electron Mobility Transistors. If satellites are involved, then the base station will employ high power transistors, possibly lateral-diffused silicon MOSFETs, or may be HJFETs –Heterojunction Field-Effect Transistors.

So, without straying very far from where you are sitting, you have tangible evidence of the dramatic influence electronics has on the way many of us conduct our business and recreation. All the different transistors mentioned above have the ability to reform in high-speed digital logic;at high frequencies; with low noise; at high output power, in semiconductor memory. Of course, our electronics-oriented activities would not be possible if the supply of electricity were curtailed. This could happen, either by the exhaustion of the Earth’s store of fossil fuels, or by the threat to our habitable environment that the extraction and use of them entails.

1. The size of a silicon MOSFET is ….. .
2. 1,000 millimeters in diameter
3. 1/100,000,000 of a centimeter
4. about 1 cm2in area
5. 1/1,000 of the diameter of a human hair
6. Heterojunction Bipolar Transistors..................... .
7. still use the vacuum-tube technology
8. make it possible for a mobile phone to transmit signals
9. make a lot of noise when they work
10. used to occupy an entire room fifty years ago
11. It is implied in paragraph 3 that much of cell phone memory storage is used up by......................
12. camera and music applications
13. flash memory applications
14. communication applications
15. hand-set amplifiers
16. It is implied in paragraph 3 that much of cell phone memory storage is used up by......................
17. fossil fuels
18. habitable environment
19. the eastern countries
20. electrical appliances
21. All of the following are some kind of transistors except:
22. HBTs
23. PDAs
24. HEMTs
25. HJFETs
26. The word “nonchalantly” in paragraph 2 is closest in meaning to:
27. Unexpectedly
28. Forcefully
29. Casually
30. Nervously
31. The word “tethered” in paragraph 3 is closest in meaning to:
32. Weighty
33. Dull
34. Tied
35. Bulky
36. The word “straying”in paragraph 4 is closest in meaning to:
37. Pretending
38. Drifting
39. Aligning
40. Enquiring
41. The word “curtailed”in paragraph 4 is closest in meaning to:
42. Destroyed
43. Stretched
44. Replaced
45. Decreased
46. The word “entails”in paragraph 4 is closest in meaning to:
47. Involves
48. Explores
49. Survives
50. Supplements

پاسخ‌های کلیدی متن اول:

1. D
2. B
3. B
4. A
5. B
6. C
7. C
8. B
9. D
10. A

Reading 2

We think of the most popular moralist in Persian literature, indeed one of the most famous of all Persian poets, not as a stern mentor but as a jovial, laughing person, with perhaps a glimmer of good-humored roguishness. That is at any rate the kind of person who emerges from his works. The biographical facts that have been handed down contribute little towards this portrait. And even Sa’di’s own words cannot altogether be trusted; they cannot be taken literally and this makes it extremely hazardous to base a reconstruction of his life on the many stories which he tells, presumably only to entertain and instruct. There is no contemporary information about him; uncertainties abound at every point.

Both his own works and tradition confirm that he was born inShiraz, a town to which he remained most movingly loyal throughout his life and for which, no doubt, he longed passionately when travelling abroad. Thanks largely to the considerable culture of his father,Sa’di received a careful education from an early age. His mother continued the same routine after his father died. When Sa’di was only about twelve.

Traditional maintainsthat he was sent to Baghdad where he was supported by the Salghurid atabeg of Shiraz; but he certainly cannot have gone there as early as 592, since it is said that he studied at the famous university, the Nezamiyyeh. Moreover, it is scarcely credible that the atabeg would have accorded such a favor to a boy oh humble albeiteducated background.

After completing his studies, heset off on travels. The many impossible ingredients in the story of how he destroyed the infamous idol in temple of Somnal exclude the likelihood Kashghar, which, if true, would suggest that even before the completion of the Golestan his fame as a poet had spread to such remote areas. This objection is corroboratedby the fact that the best Persian Ars Poetica, al-Mu jam (630) by Shams-e Qais, contains no quotations from Sa’di, though there are a great many from other poets of that period.

1. Based on what we find about him in his own works, Sa’di could best be described as:
2. an unethical man
3. an insignificant poet
4. a joyful person
5. a serious mentor
6. All of the following are true about Sa’di EXCEPT:
7. His father wasaman of culture.
8. His mother continued with his education after his father died.
9. His father died when he was 12
10. He stayed in Shiraz throughout his lifetime.
11. Sa’di’s education at the Nezamiyyeh of Baghdad may not have been supported by atabeg of Shiraz because:
12. Sa’di wasn’t educated enough to receive such a support.vv
13. Sa’di didn’t come from an aristocratic family.
14. Sa’di was too young to have studied there
15. Baghdad was a dangerous place at that time.
16. All of the following biographical information about Sa’di are most probably false EXCEPT:
17. He set off on travels after finishing his studies.
18. He visited India.
19. He destroyed the idol in the temple of Somnat.
20. He was in Baghdad by 592
21. The author suspects that Sa’di’s story of meeting with a boy in Kashgharis not based on the life events because then it would mean that:
22. books could reach remote areas in very short periods of time
23. Sa’di was well-known even before writing Golestan
24. Sa’di was the true author of al-Mujam
25. of the quotations in shams-e-Qais al-Mujam
26. The word “abound”in paragraph 1 is closest in meaning to:
27. are dubious
28. are numerous
29. are fake
30. are contradictory
31. The word “movingly” in paragraph 2 is closest in meaning to:
32. Cautiously
33. Randomly
34. Touchingly
35. Shakily
36. The word “maintains” in paragraph 3 is closest in meaning to:
37. Claims
38. Retains
39. Arranges
40. Alerts
41. The word “albeit” in paragraph 3 is closest in meaning to:
42. Although
43. Altogether
44. Definitively
45. Broadly
46. The word “corroborated” in paragraph 4 is closest in meaning to:
47. Merged
48. Announced
49. Disputed
50. Verified

پاسخ‌های کلیدی متن دوم:

1. C
2. D
3. B
4. A
5. B
6. B
7. C
8. A
9. A
10. D

Reading 3

Most sports entail an element of personal risk. The main function of a safety helmet is to protect the human skull and its fragile contents by absorbing as much as possible of the kinetic energy that is violently transferred during a collision.

The three principal damaging consequences of sudden impact are fracture of the skull, linear acceleration of the brain relative to the skull, and rotational acceleration of the brain. Although linear and rotational acceleration may occur at the same time, many mechanical testing procedures for helmets concentrate upon linear acceleration and use it as criterion of protection in specifications.

A typical helmet consists of an outer shell and a foam liner. The shell is usually made from a strong, durable and rigid material that is capable of spreading and redistributing the impacting forces without suffering brittle fracture. This reduction in pressure lessens the risk of skull fracture. The foam liner has a cellular structure that absorbs energy when crashed by impact.

Specialized designs of helmets are used in cycling, horse riding, canoeing, mountaineering, skiing, skateboarding, ice hockey, etc. Some designs are quite rudimentary and offer minimal protection. In general, the wearer expects the helmet to be comfortable to wear lightweight, not restrict peripheral vision unduly and be reasonably compact and/or aerodynamic.

Production costs should be low. Increasing the liner thickness is beneficial but, if the use of helmets is to be promoted. There are size constraints. Thus, for a cricket helmet, acceptable shell and liner thicknesses are about 2-3 mm and 15 mm, respectively strong and tough helmet shells have been produced from ABS and GRP. The great majority of shock-absorbent foam linings are made from polystyrene polypropylene and polyurethane are also used.

1. What does the passage mainly discuss?
2. function and form of safety helmets
3. speed limits in racing sports
4. element of risk in sports
5. safety measures in cycling and hockey
6. A safety helmet protects the head by.....................
7. moving violently during a collision
8. absorbing kinetic energy in a collision
9. absorbing the contents of the skull
10. transferring the kinetic energy to the skull
11. When manufacturing a helmet, the most important damage factor usually considered is.......................
12. fracture of the skull
13. linear acceleration of the brain
14. sudden impact
15. rotational acceleration
16. To absorb the energy of the impact, the foam liner is made of..............
17. a rigid material
18. a durable material
19. a material wit brittle fractures
20. a material with cellular structure
21. According to paragraph 4, the most common material used in helmet linings is................
22. ABS
23. GRP
24. Polystyrene
25. Polyurethane
26. The word “fragile” in paragraph 1 is closest in meaning to:
27. Delicate
28. Expansive
29. Restricted
30. Elastic
31. The word “criterion” in paragraph 1 is closest in meaning to:
32. Excuse
33. Benchmark
34. Analysis
35. Exception
36. The word “rudimentary” in paragraph 3 is closest in meaning to:
37. Comfortable
38. Basic
39. Profound
40. Distinct
41. The word “peripheral” in paragraph 3 is closest in meaning to
42. Mental
43. Hind
44. Outlying
45. Superior
46. The word “promoted” in paragraph 4 is closest in meaning to:
47. Estimated
48. Encouraged
49. Banned
50. Granted

پاسخ‌های کلیدی متن سوم:

1. A
2. B
3. B
4. D
5. C
6. A
7. B
8. B
9. C
10. B

Reading 4

Private managers are free to advance the interests of their firms as they see fit, as long as their actions are not specifically prohibited by law. Public managers, by contrast, are free to act only within the scope of their lawfully delegated authority and in accordance with externally imposed systems of rules and procedures. Consequently, public managers encounter many more constraints and enjoy much less freedom of choice than their private sector counterparts. This limits their ability to pursue organized objectives in a purposeful and deliberate fashion.

Having identified appropriate courses of action, public mangers find it much more difficult to put their decisions into effect. The use of rules and procedures to constrain managerial discretion reflects the emphasis placed on accountability in a democratic state. Because public officials exercise the coercive powers of the state and spend tax dollars, democratic norms require that they be held accountable for their actions. As noted earlier, where accountability cannot be achieved by setting clear goals and monitoring results, the apparent alternative is to replace managerial discretion with rules.

Historically, legislative bodies have relied upon centralized control systems to prevent fraud, waste, and misuse of authority, and to ensure fairness in hiring employees, distributing benefits, and awarding contracts. Merit-based personnel systems were instituted to safeguard the merit principle against the intrusions of patronage and to protect employees from arbitrary, capricious, or discriminatory treatment: line-item budgets and standardized accounting procedures to ensure that funds are expanded for their authorized purposes and in a fiscally responsible manner; and purchasing and bidding systems to ensure that supplies and equipment are obtained at the best available price and that contracts are awarded in a fair and unbiased manner. Not only do these systems specify the rules and procedures that managers must follow but they are also enforced by central personnel, budget, and purchasing offices that demand strict compliance.

The problem with centralized control system is that “constraining people from doing anything wrong often simultaneously constrains them from doing anything right”. This was a major theme in Vice President Gore’s 1993 National Performance Review, which described “structures of over control and micromanagement” in the federal government that leave “good people trapped in bad systems. Although much red tape can be eliminated, operating in a democratic system of governance means that public managers are and will continue to be subject to a degree of accountability that is far more detailed and pervasive than that in the private sector.

1. What does the passage mainly discuss?
2. financial rules in public organizations
3. constrains on public managers
4. role of government in economy
5. control system in private sector
6. In comparison with managers in the public sector, private managers:
7. can pursue organizational objectives more easily
8. encounter many more constraints
9. have much less freedom of choice
10. are specifically prohibited by law in many regards
11. In the public sector, the emphasis placed on accountability in a democratic state translates into:
12. less coercive powers
13. line-item budget and accounting procedure
14. merit-based personnel system
15. IT monitoring and communication system
16. It can be inferred from paragraph 3 that in public organizations the merit principle is enforced by:
17. the central personnel office
18. the central budget office
19. the central purchasing office
20. the central research and development office
21. The word “counterpart” in paragraph 1 is closest in meaning to:
22. Relatives
23. Clients
24. Competitors
25. Equivalent
26. The word “intrusions” in paragraph 3 is closest in meaning to:
27. Interferences
28. Interchanges
29. Interpretations
30. Introduction
31. The word “unbiased” in paragraph 3 is closest in meaning to:
32. Undetermined
33. Unidentified
34. Impartial
35. Improper
36. The word “compliance” in paragraph 3 is closest in meaning to:
37. Consistency
38. Obedience
39. Teamwork
40. Investigation
41. The word “pervasive” in paragraph 4 is closest in meaning to:
42. Offensive
43. Occasional
44. Official
45. Extensive

پاسخ‌های کلیدی متن چهارم:

1. B
2. A
3. A
4. A
5. D
6. A
7. C
8. B
9. D