



ACE

Engineering Academy

TEST ID: 501

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ESE- 2020 (Prelims) - Offline Test Series

Test- 2

GENERAL STUDIES AND ENGINEERING APTITUDE

SUBJECT: ETHICS AND VALUES IN ENGINEERING PROFESSION SOLUTIONS

01. Ans: (d)

Sol: The term *bigger picture* is an inspirational phrase that appeals to engineers to look at the benefits their works bring to the society. It implies that Engineer's work is not confined to just completion of assigned work. While other options are by default part of engineering, it is the sense of pride that matters more in a profession. Opportunity to make decision about what is good to public without explicit mention of public is a professional satisfaction that differentiates professions from other occupations.

02. Ans: (c)

Sol: The study of beliefs, knowledge and truth is called epistemology.

03. Ans: (b)

Sol: Ethical pluralism is a view that a society is made of plural cultures, beliefs, and traditions.

04. Ans: (a)

Sol: Engineering ethics deals with decision about reasonableness of action by resolving moral issues that rise in engineering profession and establish standards of conduct.

05. Ans: (d)

Sol: When a professional is recognized legally, public safety can be assured through

standardization of most of the professional practices and hence the job of professionals is simplified. However, nothing can protect the professional when wrong decisions are made.

06. Ans: (a)

Sol: Virtues are developed by the process and education and training which need to be practiced. Beliefs are never taught. Religion does not virtues but influence the virtues. Religion never teaches virtues.

07. Ans: (c)

Sol: Ontology deal with the study of 'being' of universal truth.

08. Ans: (b)

Sol: Option (a) is called problem of conflicting reasons.
Options (c) is called problem of disagreement.
Option (d) is called problem of prioritization.

09. Ans: (b)

Sol: Contemporary society and democracies are based on economic development. No project can be taken up that reaches all the segments of society in terms of benefit and welfare. Professional judgments always demand some compromises at some level. In other

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words, most of the projects require some section of the society to accept the loss or bear the burden. Only Cost-benefit analysis or Utilitarian theories admit that some minority shall have to compromise. Since these theories assess the benefits and losses, they are called as Consequentialist theories.

10. Ans: (d)

Sol: Common morality is a set of rules made in the interest of the society to be followed by all. They help in establishing the most acceptable standards of conduct. The rules are made in negative statements like **“DO NOT SPEED THE VEHICLE ON JUMPING SIGNALS”** so that public is cautious and alert.

11. Ans: (a)

Sol: A child needs support of parents for food because it is imperfect in fulfilling its duty. Kant measures this inability as imperfection that needs to be improved and render services to others since humans need others' support. Fundamental rights of most of the constitutions are derived from Rights theory. Therefore, all the statements except statement (1) are correct.

12. Ans: (a)

Sol: Action according to non-consequentialist theories is independent of the outcome of the action. They insist that actions should be taken without regard to the result or consequences of the action. Therefore means adopted decided the outcome or end for these theories. In case of Consequentialist theories, as assessment of the outcome of a proposed action is done before initiating action. Therefore, outcome or end decides the means or approach to action.

13. Ans: (c)

Sol: All the above acts are made by Government of India under Welfare Rights Act. LGBT

protection Act recognizes the third gender as genuine citizens of the nation. Right to information Act addresses the right of citizens to access the information that has relevance to an individual from a source. Right to food act is a welfare measure to provide food access to the people who are Below Poverty Line. Accessibility legislation provides opportunity to the disabled people to access information in both physical and virtual worlds. Organizations are encouraged to innovate new technologies to help empower the deprived and disabled section of the society. Therefore, (c) is correct answer.

14. Ans: (b)

Sol: Virtue theory and Rights theory cannot the resolve the dilemma. Utilitarian theory demands that the shop keepers should sacrifice in the interest of the public though it may cause pain to them. Gilligan's moral development theory which is based on *ethics of care* demands that gives importance to personal relationships with all the people involved. This theory emphasizes that public should not be subjected to any pain and without their concerns being addressed appropriately they should not be forced to accept a decision or proposal.

15. Ans: (d)

Sol: Act utilitarian theory has tendency to support immoral activities sometimes since an action is seen to be good if the result is good. According to this theory, causing enormous damage to the environment is correct since plastic gives flexibility of light weight carriage facility to public.

16. Ans: (c)

Sol: Aesthetics of a product, also called a beauty or ornamental value of a product enhances the utility values of the product. Diameter of the body of a pen enables the user to use the

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pen for longer durations without feeling the pain to fingers by providing right grip. It is an aesthetic value. Similarly texture of a shirt gives comfort in wearing the shirt. This is also aesthetic value.

User manual is a tertiary level of support system developed by the engineers. However it does not enhance the utility factor directly. User manual is engineer's way sharing the Do's and Don'ts with a product. User's comfort level is not affected if user manual is not provided.

Chlorination of water increases the health quotient of water. It is an integral part of providing safe water to drink.

17. Ans: (d)

18. Ans: (c)

Sol: Though enlisting consent of public is most essential, it is not possible to procure the same. Therefore, (1) is a strong factor that should be kept in mind that public suffers even if the mistake is inadvertent. Similarly, each of the other statements are very important which an engineer should not forget.

19. Ans: (d)

20. Ans: (b)

Sol: In case an engineer is shifted from one project to another, before the completion of the present project, then the engineer's answerability or accountability is limited to the extent of meeting the schedules only. Therefore, (b) is correct option.

Engineering mostly involves each individual contributing to only a part of the work. Therefore, option (a) is not correct. Everyone is accountable for the part of work completed. Therefore, option (c) is not correct. For overall project, the project head is accountable while each individual is responsible. So, statement (d) is not correct.

21. Ans: (d)

22. Ans: (a)

Sol: Engineers shall not sign any document when they are not made as per the applicable standards. Statement (1) is true. Competency is decided on the basis of educational qualification, skills required to perform duties. Employer is not the right agency to decide competency. Hence services should not be given in the areas of competence even if it is acceptable to the employer. Statement (2) is false. Engineers shall make statements in truthful and objective manner always. Public safety is always of highest priority. Statement (3) is false. Engineers are first citizens of the country and they should be law abiding citizens. It is always true to note 'Nation First, Public next, Profession next and organization last. Statement (4) is true.

23. Ans: (c)

Sol: Acknowledging errors does not require someone's permission. Statement (3) is not true. Engineers shall make truthful statements to protect public. Statement (4) is false.

24. Ans: (d)

25. Ans: (b)

Sol: Professional development is a professional obligation, an 'ought to do' work. Engineers do not lose jobs if do not enhance their skills and qualifications. Statement (2) is not true.

26. Ans: (d)

27. Ans: (a)

28. Ans: (b)

Sol: Some innovations are incidental and accidental but did not have any specific problem that an innovation could have solved. For example, Penicillin was an accidental discovery. A computer was an incidental invention. Therefore, statement



(1) is not true. Technology by itself does not have any flavor. It assumes the intentions of the user. For example, a knife gets the functionality based on the user. So, statement (2) is true. Human beings are not actually in complete control of the technology developed. For example, though nuclear weapons are developed with the intention of safeguarding a nation, they are actually developed to cause destruction and such destruction cannot be stopped. So, statement (3) is not true.

29. Ans: (c)

Sol: The case given mentions that the design was satisfactory. Hence it is inappropriate to say that mistakes might have occurred in earlier stages. The only possible reason for this case is that the conditions in which the analysis or design was developed were not conducive for the hidden problem to express itself. However, it expressed itself in production stage. This may require proper modifications in any stage starting from production stage.

30. Ans: (d)

Sol: The best course of action is to open-up before the management.

31. Ans: (c)

Sol: Developing manuals is not a part of the job of engineers. User manual is a moral obligation of engineers and it's a way of telling the Do's and Don'ts of the product.

32. Ans: (d)

Sol: All the above factors are drawbacks of Cost-Benefit analysis.

33. Ans: (b)

Sol: Processes of manufacturing is know-how and covered by Patents while name falls under the category of trademarks since it is a brand name with which the chair will be sold in the market.

34. Ans: (c)

Sol: According to virtues in philosophical studies, one should work for worldly wisdom and shall not get influenced by social status, wealth, power or pleasure. Only unhealthy soul pursues these vices

35. Ans: (a)

Sol: A patent cannot prevent an entity that has legally purchased license from improving the design. A patent cannot prevent others from understanding the underlying principles and develop same functionality in an alternative method. Therefore the last three statements are false.

36. Ans: (a)

37. Ans: (d)

Sol: Ethical conduct flows from top to bottom. Therefore, it is essential that top management accepts and adopts a clear policy on ethical conduct.

38. Ans: (d)

39. Ans: (c)

Sol: In addition to exhibiting the traits mentioned in statements 1, 2 and 4, a dishonest person either does not share information or shares only convenient information. Statement (3) is not true.

40. Ans: (c)

Sol: At post-convention level, people are matured, have no self-interest and live by principled conscience. Therefore they are original thinkers and therefore they are autonomous. Statement(II) is false.

41. Ans: (a)

Sol: Ethical absolutism, also called as cognitivism, is based on eternal, universally applicable moral principles of right and wrong. Hence they are founded in universal

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principle of good with the thorough knowledge of right and wrong. Both the statements are correct and statement (II) explains statement (I).

42. Ans: (b)

Sol: Ethics is application of morals in the society and expect responsible conduct with primary objective of benefitting the public. Both statements are independently true.

43. Ans: (b)

Sol: Engineering profession is a commitment to serve the society through useful, usable and purposeful products. Only morally committed engineers can ensure that. Statement (I) is true. Statement true is also true. But both the statements are independently true.

44. Ans: (a)

Sol: In addition to the roles played by engineers, they are also required to be social guardians in many other dimensions. Therefore both the statements are true with statement (II) clearly explaining the first.

45. Ans: (c)

Sol: If the law demands, prior permission of employer is not required. Non-compliance with law is a serious offence and attracts punishment under contempt of court. Hence statement (II) is false.

46. Ans: (a)

47. Ans: (b)

Sol: An employment is a contractual agreement between the organization and an employee and will be in force during the employment period. At the discretion for the employer, confidentiality clause may be specified by the organization. Both the statements are independently true.

48. Ans: (d)

Sol: IPR issued can be revoked in public interest. Therefore IPR is not absolute. Statement (II) is false. User manuals are books that fall under the category of literary works. Literary works are covered by copyrights. Statement (II) is true.

49. Ans: (d)

Sol: IT is engineer's responsibility for public safety and hence devise appropriate safety measures so that users do not harm themselves. Therefore, statement (I) is false. Correcting mistakes is always more economical than innovative designs.

50. Ans: (c)

Sol: Whistle blowers attract the fury of employers and face the threat of future unemployment since employers look to them as disobedient and disloyal. Statement (I) is true.

Whistle blowers protection act aims at protecting the whistleblowers but not employees of the organization. The bill is not planned to provide immunity to the employees. Statement (II) is false.