


**MADE EASY**

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**Test Centres:** Delhi, Hyderabad, Bhopal, Jaipur, Pune

**ESE 2026 : Prelims Exam | GS & ENGINEERING**  
**CLASSROOM TEST SERIES | APTITUDE**
**Test 9**
**Section A :** Ethics and values in Engineering profession [All Topics]

**Section B :** Basics of Project Management [All Topics]

**Section C :** General Principles of Design, Drawing, Importance of Safety [All Topics]

**Answer Key**

1. (c)	11. (d)	21. (b)	31. (d)	41. (d)
2. (a)	12. (a)	22. (d)	32. (b)	42. (c)
3. (d)	13. (a)	23. (b)	33. (b)	43. (d)
4. (c)	14. (c)	24. (c)	34. (b)	44. (d)
5. (b)	15. (a)	25. (b)	35. (b)	45. (d)
6. (c)	16. (c)	26. (c)	36. (d)	46. (d)
7. (d)	17. (b)	27. (b)	37. (d)	47. (b)
8. (c)	18. (c)	28. (a)	38. (a)	48. (a)
9. (d)	19. (c)	29. (b)	39. (b)	49. (b)
10. (d)	20. (c)	30. (a)	40. (c)	50. (a)

## Section A : Ethics &amp; values in Engg. Profession

1. (c)  
Risk irrespective of impact, need to be avoided and to be publicized for avoidance of greater harm.
2. (a)  
Value is what make something desirable or undesirable.
3. (d)
4. (c)
5. (b)
6. (c)  
Micro-ethics addresses issues arising at the personal or individual level when one faces a conflict between "What are the demands of conscience and what needs to be done as per occupational requirements?". It is an ethical issue which an employee deal with.
7. (d)
8. (c)
9. (d)
10. (d)
11. (d)
12. (a)
13. (a)  
**Self-direction Virtues:** Self-understanding, humility, moral autonomy, courage, self-discipline, perseverance, self-respect, integrity, honesty  
**Public Spirited Virtues:** Beneficence, generosity, sense of community  
**Team Work Virtues:** Collegiality, cooperation, respect for authority, loyalty  
**Proficiency Virtues:** Competence, diligence, creativity.
14. (c)
  - Normative inquiry seeks to identify and justify the morally- desirable standards that should guide individuals and groups.
  - Descriptive inquiry is aimed to obtain facts needed for understanding and resolving value issues
15. (a)
16. (c)  
Human action is explained as an act which proceeds from prior knowledge and free will. It differs from 'acts of humans' which result without the intervention of intellect and free will and as such normally they are beyond human control.

17. (b)

18. (c)

Nepotism is the unfair use of power in order to get jobs or other benefits for your family or friends.

19. (c)

20. (c)

21. (b)

22. (d)

Loyalty to companies or their owner should not be equated with merely obeying one's immediate supervisor.

23. (b)

24. (c)

Courage involves element of mastery on fear.

25. (b)

### Section B : Basics of Project Management

26. (c)

The halo effect is the cognitive bias demonstrated in the question scenario. The manager allows a single, prominent positive piece of information to create a general positive 'halo' that influences the perception of the applicant's other, unrelated qualities without objective evidence for these other traits.

27. (b)

- NPV discounts future cash flows, meaning long-term cash flows become much smaller when converted to present value.
- It is biased towards short run projects and it uses a fixed interest rate over the duration of the project.

28. (a)

In PERT, the standard deviation ( $\sigma$ ) is used to measure the uncertainty of the estimate.  
Uncertainty  $\propto$  standard deviation

$$\therefore \text{Standard deviation, } \sigma = \left( \frac{t_p - t_o}{6} \right)$$

$$\text{For contractor A: } \sigma_A = \frac{9-4}{6} = 0.83$$

$$\text{For contractor B: } \sigma_B = \frac{15-6}{6} = 1.5$$

For contractor C:  $\sigma_C = \frac{11-5}{6} = 1$

For contractor D:  $\sigma_D = \frac{20-7}{6} = 2.17$

Contractor with least uncertainty is the one with the smallest standard deviation.

$\therefore$  Contractor A is least uncertain or most certain.

29. (b)

**Risk response planning** involves developing proactive options and actions to manage project risks. The primary strategies for dealing with negative risks (threats) are:

- **Avoidance** : Eliminating the risk entirely by changing the project plan, scope, or objectives.
- **Transfer** : Shifting the responsibility and impact of the risk to a third party, often through contracts or insurance.
- **Mitigate** : Taking actions to reduce the probability of the risk occurring or minimizing its impact, if it does occur.
- **Acceptance** : Acknowledging the risk and deciding not to take any proactive action, perhaps by developing a contingency plan or setting aside a reserve.

30. (a)

Total float,  $F_T = T_L^j - T_E^i - t_{ij}$

Free float,  $F_F = T_E^j - T_E^i - t_{ij}$

Independent float,  $F_{ID} = T_E^j - T_L^i - t_{ij}$

Interfering float,  $F_{IT} = S_j = T_L^j - T_E^i$

31. (d)

The entire practice of resource allocation is founded on the principle of scarcity in real-world scenarios. Both tangible assets (resources) such as budget, equipment, and personnel and intangible constraints like project deadlines (time) are considered finite. The process involves making strategic decisions about how to best use these limited elements to achieve project goals efficiently.

32. (b)

**Murder board**: This is an intensive review process where a panel of experts rigorously challenges a project proposal to identify fatal flaws or unviable assumptions, effectively 'killing' weak projects early on.

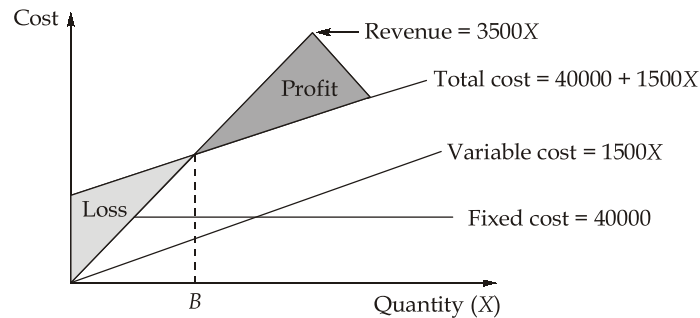
33. (b)

Slack is measured within activities whereas lag is measured between activities.

34. (b)

35. (b)

Break even chart:



$$\text{Savings (s)} = \text{Revenue} - \text{Total cost}$$

$$\text{Breakeven : } s = 0$$

$$\Rightarrow 3500X = 40000 + 1500X$$

$$\Rightarrow X = \frac{40000}{2000} = 20 \text{ m}^3$$

36. (d)

The risk register is a critical project management document that serves as a central repository for information regarding identified project risks. It is a "living document" that typically includes the following information:

- Identified risks and their descriptions.
- The potential impact and probability/likelihood of each risk.
- Risk mitigation strategies or response plans (solutions).
- Assigned risk owners responsible for monitoring and managing the risk.
- The current status of each risk (open, in progress, closed).

37. (d)

Most conflict in a project occurs during the execution phase.

38. (a)

Stakeholders influence is highest in the initial stage of project. Changes can be made and cost of changes made in the initial stages is less. On the other hand, cost of changes increases as the project progresses due to which the stakeholders influence reduces in the later stages.

### Section C : General Principles of Design, Drawing, Importance of Safety

39. (b)

A technology evolves in three stages :

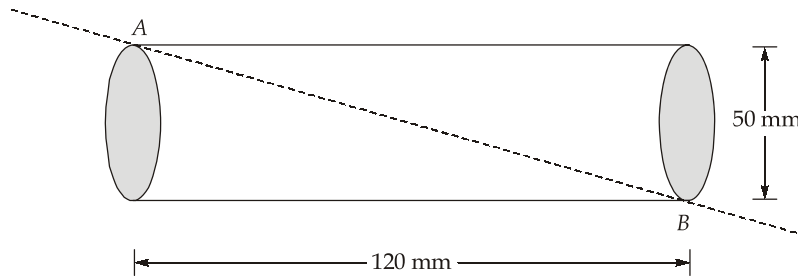
- Invention : The creative act by which a novel idea is conceived.
- Innovation : The process by which an invention is brought into successful practice and is utilised by the economy.
- Diffusion : The widespread knowledge of the capabilities of the innovation.

40. (c)

- Brainstorming and affinity diagram are used for problem definition.
- Check sheet, Histogram, Pareto chart, Run chart and scatter diagram are used for cause finding.
- Pugh chart is used for solution finding and implementation.

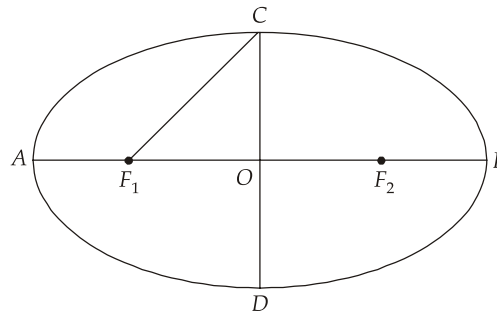
41. (d)

42. (c)



$$\begin{aligned}\text{Major axis} &= AB = \sqrt{(50)^2 + (120)^2} \\ &= 130 \text{ mm}\end{aligned}$$

43. (d)



Here,  $F_1F_2 = 80 \text{ mm}$ ,  $AB = 100 \text{ mm}$

We know that distance of the ends of minor axis from focus is equal to half the major axis.

$$\therefore CF_1 = \frac{AB}{2} = 50 \text{ mm}$$

$\therefore$  From  $\triangle CF_1O$ ,

$$\begin{aligned}OC &= \sqrt{(CF_1)^2 - (F_1O)^2} \\ &= \sqrt{(50)^2 - (40)^2} = 30 \text{ mm}\end{aligned}$$

$$\therefore CD = 2OC = 60 \text{ mm}$$

44. (d)

- First quadrant : Opposite side of the reference line.
- Second quadrant : Same side of the reference line.
- Third quadrant : Opposite side of the reference line.
- Fourth quadrant : Same side of the reference line.

45. (d)

According to the document, global strategy on occupational health for all, the ten high priority objectives proposed are :

1. Strengthening of international and national policies for health at work.
2. Developing healthy work environment.
3. Strengthening of OHS.
4. Development of healthy work practices and promotion of health at work.
5. Establishing of support services for occupational health.
6. Development of occupational health standards based on scientific risk assessment.
7. Development of human resources for occupational health.
8. Establishment of registration and data systems, development of information services for experts.
9. Strengthening of research.
10. Development of collaboration in occupational health and with other activities and services.

46. (d)

47. (b)

Scale of chord is used to set out or measure angles when protractor is not available.

48. (a)

Classes of fire	Extinguishing agent
Class A	Water
Class B	Foam, CO <sub>2</sub>
Class C	Dry chemical powders
Class D	Special dry chemical powders

49. (b)

Both are correct without any relation between them.

50. (a)

For the end of the product development process the tasks like process planning, design of tooling, negotiating with suppliers, developing a quality assurance plan, marketing plan, distribution plan, customer service plan, maintenance plan, plan for retirement of the product from service.

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