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TEST SERIES

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ESE-2017 : Prelims Exam

UPSC Engineering Services Examination

GENERAL STUDIES & ENGG . APTITUDE

Answer Key & Solutions

Test 12: Part Syllabus Non-Technical
Basics of Project Management

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

DETAILED EXPLANATIONS

2. (c)
Earnest money deposit (EMD) is the amount to be deposited by the tenderer when they submit their contract.
3. (c)
UNIDO method measure cost and benefit in terms domestic price whereas L-M method used international price.
5. (c)
Standard deviation (s.d):
- $$\sqrt{\text{Variance}} = \sqrt{9} = 3$$
- $$Z = \frac{X - \bar{X}}{\sigma} = \frac{30 - 30}{3} = 0$$
- $$P(0) = 50\%$$
- ∴ The probability that the project will be completed in 30 days is 50%.
8. (a)
It is biased towards short run projects and it uses a fixed interest rate over the duration of the project.
10. (c)
Flaw in expert judgement when people good in certain areas are deemed as good in all areas.
12. (b) Statement 1 is incorrect as Gantt chart is a type of bar-chart and not pie-chart.
A Gantt chart is a popular type of bar chart that illustrates a project schedule and have become a common technique for representing the phases and activities of a project work breakdown structure, so they can be understood by a wide audience.
13. (a) Statement 2 is incorrect. It is undertaken during initiation phase and not planning phase of project. A feasibility study is conducted to investigate whether each option addresses the project objective and a recommended solution is determined. Issues of feasibility and justification are addressed during initiation phase of the project.
14. (c) Project Risk Management refers to both identifying potential threats and possible actions to be taken to reduce those risks. In risk management, high-threat potential problems are identified along with the action that is to be taken on each high threat potential problem, either to reduce the probability that the problem will occur or to reduce the impact on the project if it does occur.
17. (d)
Independent float is equal to free float minus tail event slack, i.e.
- $$F_{ID} = F_F - S_i$$
19. (b)
Total float, TF = LFT – EFT = 58 – 40 = 18 days
Free float, FF = {EFT – EST} – t_{ij} = {40 – 21} – 19 = 0

20. (d)

$$\text{Annual depreciation} = \frac{P - C_s}{n} = \frac{20,000 - 2,000}{6} = 3000$$

∴ Book value at the end of two years = 20,000 – 3 × 3000 = 11000

21. (d)

Project team salaries are classified as direct costs.

24. (b)

$$CV = EV - AC$$

$$EV = (CV + AC) = (200 + 5000) = ₹ 5200$$

27. (d)

Fixed indirect cost is independent of the progress of project. It includes initial expenditure for purchase of equipment, installation and storage charge required for different activities.

28. (d)

Wages or payment allowance shall be made on the basis of amount and quality of work. Wage payment plans can be classified under two groups :

- (a) Non incentive plans like Time or Day rate system.
- (b) Incentive Wage plans like piece rate or other schemes.

29. (c)

$$\text{Cost slope} = \frac{\text{Crash cost} - \text{Normal cost}}{\text{Normal time} - \text{Crash time}}$$

31. (b)

$$\text{Expected time, } t_e = \frac{t_0 + 4t_l + t_p}{6} = \frac{5 + (4 \times 10) + 21}{6} = 11 \text{ days}$$

32. (b)

PERT → Event oriented → Time is the controlling factor.

CPM → Activity oriented → Both time and cost are considered.

33. (b)

Work breakdown structure is a pictorial representation of major and minor objectives of a project. It is not a network. Instead it is a preliminary diagram of the way in which all the minor objectives go together to ensure the attainment of the major objective.

35. (c)

The IRR is the value of the discount factor when NPV is zero.

37. (a)

$$\text{Break Even Point} = \frac{5,00,000}{(100 - 50)} = 10,000 \text{ products}$$

38. (c)

A breach of contract is a failure to perform either express or implied duties of the contract. Either the buyer or the seller can be responsible for a breach of contract.

39. (c) Preliminary project report contains topographic details and soil survey along alternate alignments, consideration of geometric design and other requirements of alignment, preparation of plans and comparison of alternate routes, economic analysis and selection of final alignment.
40. (a) Effective communication is the key to successful negotiation. Misunderstanding is the most common communication problem. A project manager should listen actively, acknowledge what is being said, and speak for a purpose. It is essential to listen attentively and communicate articulately.
41. (a) Project performance appraisals are a tool and technique for the manage project team process and are used, among other objectives, to reclarify roles and responsibilities. It is critical that team members receive positive feedback in what might otherwise be a hectic environment.
42. (a) Improved project performance not only increases the likelihood of meeting project objectives, it also creates a positive team experience contributing to the enhancement of team capabilities. It results in improved teamwork, enhanced people skills and competencies, motivated employees, reduced staff turnover rates, and improved overall team performance.
43. (c) Payback period analysis determines the time required for a project to recover the investment in it and become profitable. A weakness of this approach is a lack of emphasis on the magnitude of the profitability.
44. (b) A positive schedule variance indicates that the project is ahead of schedule. A positive cost variance indicates that the project has incurred less cost than estimated for the work accomplished; therefore, the project is under budget.

