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Test Centres: Delhi, Noida, Hyderabad, Bhopal, Jaipur, Lucknow, Bhubaneswar, Indore, Pune, Kolkata, Patna**ESE 2020 : Prelims Exam**
CLASSROOM TEST SERIES**GENERAL STUDIES**
& **ENGG. APTITUDE****Test 11****Section A :** Information and Communication Technologies (ICT)**Section B :** Ethics and Values in Engineering Profession**Section C :** Basics of Project Management

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

DETAILED EXPLANATIONS

1. (b)
NLP or Natural Language Processing is a part of Artificial Intelligence.
2. (a)
Ministry of Human Resource Development launched one of world's largest Integrated Online Junction for School Education 'Shagun'. It is an over-arching initiative to improve school education system by creating a junction for all online portals and websites relating to various activities of the Department of School Education and Literacy in the Government of India and all States and Union Territories.
6. (c)
Quantum computers use qubit or quantum bit as their basic unit.
7. (b)
Nation Common Mobility Card (NCMC) was launched by Ministry of Housing and Urban Affairs.
9. (a)
The term Li-Fi was coined by the University of Edinburgh Professor Harald-Haas.
11. (a)
The OSI model stands for open system inter connection model and is developed by international standard organization (ISO).
It is a seven separate layer models related to one another and ordered as shwon below:

7	Application (Top layer)
6	Presentation
5	Session
5	Transport
3	Network
2	Data link
1	Physical (Bottom layer)

12. (c)
Keyboard is an input device on which many shortcut options are also present like Caps Lock which helps to lock the font using capital letters, PrtSc helps you to take screen shots and Pg Up helps you to scroll a document without using mouse.
13. (b)
China is the First Country in the World to launch First Quantum Satellite nicknamed 'Micius'.
16. (b)
Top speed of Param Shivay is 837 Teraflops. 'PARAM SHIVAY' is jointly developed by Department of Scienc and Technology (DST) and Centre of Development of Advance Computing (CDAC).

17. (c)
In an effort to establish India as a key global player in the Standardisation, research and development and manufacturing of 5G equipment, a Massive MIMO radio laboratory has been set up at IIT Delhi. This will be the first such lab in India.
19. (a)
Secure Sockets Layer (SSL) is a protocol developed by Netscape for transmitting private documents via the Internet. SSL uses a cryptographic system that uses two keys to encrypt data “ a public key known to everyone and a private or secret key known only to the recipient of the message.
21. (d)
They are battery-operated devices that produce aerosol by heating a solution containing nicotine, which is the addictive substance in combustible cigarettes. • These include all forms of Electronic Nicotine Delivery Systems, Heat Not Burn Products, e-Hookah and the like devices. • Smoking e-cigarettes is also called vaping.
24. (b)
ROM is a combinational circuit that is generally used as a firmware chip on any digital device.
26. (d)
- Professional ethics refer to the principles that govern the behaviour of a person or group in an environment related to particular profession. These are often codified as a set of rules, which a particular group of people use.
 - Honesty, integrity, transparency, accountability, obedience to the law, confidentiality, objectivity, respect and loyalty are major aspects of the professional ethics.
 - One of the earliest examples of professional ethics is the Hippocratic Oath (It requires a new physician to swear, by a number of Greek healing gods, to uphold specific ethical standards.) to which medical doctors still adhere to this day.
28. (a)
Integrity is one of the self-directed virtues.
32. (d)
- Normative ethics deals with norms or set of considerations how one should act. It is a study of ethical action and sets out the rightness or wrongness of the action. It is also called as prescriptive ethics.
 - Applied ethics deals with the philosophical examination, from a moral standpoint of particulars issues in private and public life which are matters of moral judgement.
 - Meta ethics deals with the origin of the ethical concept themselves. It does not consider whether an action is good or bad, right or wrong; rather it questions - what goodness or normality itself is?
 - Descriptive ethics deals with what people actually believe to be right or wrong, and accordingly holds up the human actions acceptable or not acceptable or punishable under a custom or law.

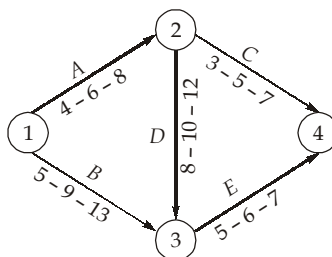
35. (d)
- Hard skills include typing speed, proficiency in foreign languages, a degree, machine operation, computer programming, etc.
 - Soft skills include leadership, motivation, patience, communication, flexibility, problem-solving ability, teamwork, time management, etc.
37. (d)
- It is conscience that covers all situations.
 - Law is applicable within the boundaries of a nation state only, while regulations are something an individual follows even after leaving the country.
38. (c)
- Systemic accidents are harder to understand and control. They are characteristic of very complex technologies and the complex organizations that are required to operate them. It requires many stages from design to processing and maintenance.
39. (c)
- Monte Carlo simulation uses random numbers to solve problems requiring decision making under uncertainty where a mathematical solution is highly complex. While decision tree analysis is a graphical technique that can be used for analyzing the pros and cons of alternative decisions and choosing the best possible course of action.
40. (a)
- UNIDO approach measures costs and benefits in terms of consumption, the L-M approach measures costs and benefits in terms of uncommitted social income.
41. (c)
- $$\text{Cost performance index} = \frac{BCWP}{ACWP}$$
- $$BCWP = \text{Budgeted cost for work performed}$$
- $$= 150 \times 2000 = \text{Rs. } 300000$$
- $$ACWP = \text{Actual cost for work performed}$$
- $$= \text{Rs. } 240000$$
- $$CP \text{ Index} = \frac{300000}{240000} = 1.25$$
42. (c)
- Earnest money deposit is the amount to be deposited by all the tenderers. It is around 1-3% of the tender value.
43. (c)
- Usually, in Project risk are high at start as number of unknown and unpredictable elements are present. In Operation, risk are not high as it is repetitive in nature.

44. (d)
 Dummy activity is used to specify precedence relationship.
 It doesn't consume any time and money.

45. (b)

Day	Activities	Resources
1	A+C+D	17
2	A+C+D	17
3	A+C+D	17
4	A+C+D	17
5	A+C+D	17
6	B+C+D	15
7	B+C+D	15
8	B+C+D	15
9	B+C+D	15
10	B+C+E	17
11	B+E	12
12	B+E	12

46. (c)



$$t_E = \frac{t_p + t_o + 4t_m}{6}$$

Critical path is 1-2-3-4

Activity	t_E	$\sigma = \left(\frac{t_p - t_o}{6} \right)$
A	6	0.67
B	9	1.33
C	5	0.67
D	10	0.67
E	6	0.33

$$\begin{aligned} \sigma_{cp} &= \sqrt{0.67^2 + 0.67^2 + 0.33^2} \\ &= 1.003 \approx 1 \end{aligned}$$

48. (a)
In fixed price or lump sum contract, the contractor is required to perform the work at the negotiated contract value. If the estimated target cost was low, the total profit is reduced and may even vanish. The contractor may not be able to underbid the competitors if the expected cost is overestimated. Thus contractor assumes a large risk.
49. (d)
Though a critical path passes through events connecting zero-slacks ($T_E = T_L$), all the paths connecting events of zero slacks are not necessarily critical paths.
50. (c)
Unsecured loans raised if any, for funding the project should not be repaid as long as dues to the bank/financial institution remain unpaid.

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