

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING
Staff Recruitment 2024 : Adv No. IIT/STAFFREC/01/2024 dated 12-03-2024

Level – I (Objective based Test)

Screening Test (MCQ type with Negative Marking) : Technical and Analytical/Logical Aptitude Questions

Date: 10 July 2024	Duration: 60 Minutes	Total Marks: 50				
Post: Junior Technician (Systems)	ADMIT CARD NUMBER (Last Four Digits only)	Department: Civil & Environmental Engineering				
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Instructions

- Write and mark carefully **THE LAST FOUR DIGITS OF YOUR** admit card number, post applied for, and Department codes on the OMR answer sheet and sign at the appropriate place. In the absence of admit card number and signature on the OMR sheet, it may not be evaluated and it may be cancelled.
- Candidates are not allowed to carry any papers, notes, books, cellular phones, calculators etc., Any candidate found using or in possession of such unauthorised material or involved in copy or impersonation or adopting unfair means or behaviours will be disqualified and may be subjected to penal action.
- The examination is objective type. **Wrong answers carry negative marks. For wrong answers: -0.25 Marks.**
- The candidate must check that Question Booklet (10 Pages) has 50 objective questions with multiple choice answers. If any discrepancy is found, report to the invigilator immediately, so that the question booklet may be replaced.
- Each objective question is followed by four answers in which one is correct. Your task is to choose the correct answer and **mark your answer on the OMR answer sheet, not on the question booklet.**
- Completely darken the CIRCLE, so that the alphabet inside the CIRCLE is NOT visible. Darken only one circle for each question. The CORRECT and the WRONG method of determining the CIRCLE on the OMR answer sheet is shown below:

<u>CORRECT METHOD</u>	<u>WRONG METHOD</u>
☐ ☒ ☐ ☐	☐ ☒ ☐ ☒
	☐ ☒ ☐ ☒
	☐ ☒ ☐ ☒
	☐ ☒ ☐ ☒
	☒ ☒ ☒ ☒
	☐ ☒ ☐ ☒

- Use blue/black ink ball point pen for darkening the circles on the OMR answer sheet. Do NOT use pencil.
- Folding/wrinkling or putting any unwanted mark or damaging the OMR answer sheet is prohibited. The candidate will be responsible for invalidation of the OMR answer sheet for doing such deeds.
- Use the space provided for rough work in the question booklet.
- The OMR answer sheet and the question booklet must be submitted to the invigilator after the examination.

Screening Test General Aptitude MCQs - Level IA

1. In a code language, "APPLE" is coded as "BQQMF". How is "ORANGE" coded in that language?
(a) "PSBOHF" (b) "PSBPHF" (c) "PSBQIF" (d) "PSBQHF"
2. Choose the best summary of the following paragraph: "Climate change is a significant issue facing the world today. It has the potential to cause widespread environmental, economic, and social damage. Addressing it requires global cooperation and immediate action."
(a) Climate change is an important issue that needs to be addressed globally and immediately. (b) Climate change affects the environment, economy, and society. (c) Global cooperation is needed to address climate change. (d) Climate change will cause damage.
3. Five friends (A, B, C, D, E) have different heights. A is taller than B but shorter than C. D is taller than C but shorter than E. Who is the tallest?
(a) A (b) C (c) D (d) E
4. A man is facing north. He turns 45 degrees clockwise and then 180 degrees counterclockwise. In which direction is he now facing?
(a) North-east (b) North-west (c) South-east (d) South-west
5. Which number replaces the question mark in the series: 5, 11, 24, 51, ?
(a) 104 (b) 106 (c) 108 (d) 110
6. In a family, there are six members A, B, C, D, E and F. A and B are a married couple, A being the male member. D is the only son of C, who is the brother of A. E is the sister of D. B is the daughter-in-law of F, whose husband has died. How is E related to C?
(a) Son (b) Daughter (c) Mother (d) Niece
7. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:
(a) Rs. 120 (b) Rs. 123 (c) Rs. 121 (d) Rs. 122
8. Find the missing term in the sequence: 1, 2, 5, 12, 27, ...?
(a) 50 (b) 58 (c) 60 (d) 65

9. Marathon: Race: Symphony:
 (a) Music (b) Concert (c) Composition (d) Orchestra
10. E, F, G, A, B, C, D and H are facing inwards and seated around a circular table. B is second of H to his right and third to A on his left. D is not immediately seated next to either B or H and is actually to the right of F on the 2nd position (to F). C is fourth to G on his right and is an immediate neighbour of B. Who sits to the right of B?
 (a) C (b) E (c) H (d) G
11. An alloy of copper and aluminium has 40% copper. An alloy of Copper and Zinc has Copper and Zinc in the ratio 2: 7. These two alloys are mixed in such a way that in the overall alloy, there is more aluminium than Zinc, and copper constitutes x% of this alloy. What is the range of values x can take?
 (a) $30\% \leq x \leq 40\%$ (b) $32.5\% \leq x \leq 42\%$ (c) $33.33\% \leq x \leq 40\%$ (d) $32.25\% \leq x \leq 40\%$
12. A and B are cousins. A's present age is twice that of B's present age. After 8 years, A's age will be 1.5 times that of B's age. What is the present age of A?
 (a) 16 years (b) 20 years (c) 18 years (d) 12 years
13. A train covers a distance of 720 km in 8 hours. If it travels at a speed which is 20 km/hr more, how much time will it take to cover 1540 km?
 (a) 10 hours (b) 12 hours (c) 14 hours (d) 16 hours
14. A survey conducted in a city showed the distribution of people among different age groups as follows:

Age Group	Population Percentage
0-18 years	25%
19-40 years	40%
41-60 years	25%
Above 60	10%

If the city's population is 2 million, how many people are aged between 19 and 40 years?

- (a) 500,000 (b) 800,000 (c) 1,000,000 (d) 1,200,000
15. Read the following passage and answer the question:
 "In a recent study, researchers found a correlation between increased social media usage and decreased attention span among teenagers. The study observed over 1000

students across various schools and noted that those who spent more than 4 hours daily on social media showed a 25% decrease in their ability to concentrate on academic tasks."

What is the main inference that can be drawn from the study?

- | | | | |
|---|---|---|---|
| (a) Social media usage improves academic performance. | (b) Increased social media usage negatively impacts attention span. | (c) Teenagers should avoid using social media entirely. | (d) Academic tasks have become less engaging for teenagers. |
|---|---|---|---|

16. A person buys tea of three different qualities at ₹ 800, ₹ 500, and 300 per kg, respectively, and the amounts bought are in the proportion 2: 3: 5. She mixes all the tea and sells one-sixth of the mixture at 700 per kg. The price, in INR per kg, at which she should sell the remaining tea, to make an overall profit of 50%, is
- | | | | |
|---------|---------|---------|---------|
| (a) 653 | (b) 688 | (c) 692 | (d) 675 |
|---------|---------|---------|---------|

17. Identify the item that is least related to others:

- | | | | |
|------------|--------------|------------|------------|
| (a) Oxygen | (b) Nitrogen | (c) Helium | (d) Carbon |
|------------|--------------|------------|------------|

18. Sum of first 12 terms of a GP is equal to the sum of the first 14 terms in the same GP. Sum of the first 17 terms is 92, what is the third term in the GP?
- | | | | |
|--------|---------|--------|---------|
| (a) 92 | (b) -92 | (c) 46 | (d) 231 |
|--------|---------|--------|---------|

19. Three pipes A, B and C can fill an empty tank in 4 hours, 5 hours and 6 hours respectively. There is a hole in the tank, which can empty a full tank in 8 hours. Initially, the tank is empty. A and B are opened. They are closed after half an hour. C is now opened and allowed to run for the next 1 hour. Find the total time required to fill the tank if all three taps are opened simultaneously after the first one and a half hours
- | | | | |
|----------------|---------------|----------------|-------------|
| (a) 4.11 hours | (b) 5.6 hours | (c) 3.11 hours | (d) 4 hours |
|----------------|---------------|----------------|-------------|

20. If $\log_2 x = 10$, what is the value of x?

- | | | | |
|--------|--------|---------|---------|
| (a) 10 | (b) 50 | (c) 200 | (d) 100 |
|--------|--------|---------|---------|

Screening Test Technical Questions MCQs - Level I B

21. Where is swap space created?
(a) RAM (b) CPU registers (c) Secondary Storage Device (d) ROM
22. The following file contains the user's password in encrypted format?
(a) /etc/passwd (b) /etc/shadow (c) /etc/encrypted (d) All the above
23. If the shell value is set as /sbin/nologin, when user tries to login?
(a) shell closes the connection (b) "Login not allowed" message is displayed (c) User will not get GUI access but gets shell access (d) User logs in and gets access to a shell [noshell@user /sbin/]
24. What is the purpose of a VLAN?
(a) To increase bandwidth (b) To create separate broadcast domains (c) To manage IP addresses (d) To encrypt data
25. Which command is used to map path and identify potential connectivity & speed issues between two nodes?
(a) Traceroute (b) Ping (c) Telnet (d) Netstat
26. Which is the default protocol used in the directory services?
(a) DNS (b) DHCP (c) LDAP (d) TCP/IP
27. Which type of DNS record is commonly used in forward lookup zone to resolve a domain name to a specific IP address?
(a) an A record (b) a MX record (c) a RTP record (d) a TXT record
28. Which of the following is not a component of Active Directory?
(a) Forests (b) Trees (c) Domains (d) Webs

29. LAN works on which of the following layers?
- (a) Physical (b) Data Link (c) Physical and Data Link (d) Network and Data Link
30. Which of the following will list destination MAC addresses?
- (a) Arp (b) Ping (c) Dig (d) nbstat
31. Which of the following cable types transmits data over 100Mbps per direction?
- (a) 100BaseTX (b) 10BaseT (c) 100BaseT (d) 10GBBaseT
32. The main difference between SNMPv3 and SNMPv2 is _____.
- (a) Management (b) Integration (c) Classification (d) Enhanced security
33. Which command is used to remove files?
- (a) Rm (b) Remove (c) erase (d) Delete
34. _____ command is used to remove an empty directory.
- (a) rdir (b) rd (c) rmdir (d) None of the above
35. The mv command can be used for
- (a) Renaming a file (b) Move the file to a different directory (c) Both 1 and 2 (d) None of the above
36. Which of the commands is used to count the total number of lines that a file contains?
- (a) wc -l (b) wc -c (c) wc -w (d) wc -r
37. Which command can be used to find a word from a text file?
- (a) cut (b) sort (c) find (d) grep
38. Which command creates an empty file if the file does not exist?
- (a) cat (b) touch (c) ed (d) read

39. pwd command displays
- | | | | |
|-------------------|---------------------------|-------------------------------|---------------------------|
| (a) user password | (b) password file content | (c) Present working directory | (d) None of the mentioned |
|-------------------|---------------------------|-------------------------------|---------------------------|
40. A directory which has some contents inside it and can be removed by using _____ command.
- | | | | |
|------------|--------|---------|-----------------------|
| (a) rm -rf | (b) rm | (c) del | (d) None of the above |
|------------|--------|---------|-----------------------|
41. What does DHCP stand for?
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|-----------------------------------|---|---|--|
| (a) Dynamic Host Control Protocol | (b) Dynamic Host Configuration Protocol | (c) Dynamic Host Communication Protocol | (d) Dynamic Host Configuration Program |
|-----------------------------------|---|---|--|
42. Which command can be used to display routing tables in Linux?
- | | | | |
|----------------|--------------|-------------------|----------------------|
| (a) netstat -r | (b) route -n | (c) ip route show | (d) All of the above |
|----------------|--------------|-------------------|----------------------|
43. Which one of the following networks uses dynamic or adaptive routing?
- | | | | |
|------------|-------------|---|--|
| (a) TYMNET | (b) ARPANET | (c) SNA (IBM's System Network Architecture) | (d) Dynamic Host Configuration Program |
|------------|-------------|---|--|
44. The _____ protocol used by email servers to exchange messages with one another.
- | | | | |
|----------|----------|----------|----------|
| (a) HTTP | (b) SMTP | (c) IMAP | (d) POP3 |
|----------|----------|----------|----------|
45. The device which copies the electric signals from one Ethernet to another is _____.
- | | | | |
|------------|--------------|---------|-----------------|
| (a) Bridge | (b) Repeater | (c) Hub | (d) Passive hub |
|------------|--------------|---------|-----------------|

46. _____ allows switches to pass information about many or all VLANs configured on the switches.

- (a) Trunking (b) STP (c) PoE (d) VLANs

47. _____ provides IP configuration information to hosts.

- (a) The DNS server (b) The DHCP server (c) The proxy server (d) All the above

48. What is the purpose of DNS in a network?

- (a) To provide IP addresses to devices (b) To resolve domain names to IP addresses (c) To manage VLAN configurations (d) To assign MAC addresses to devices

49. What is the first step in troubleshooting a printer that is not printing?

- (a) Reinstall the printer driver (b) Check if the printer is turned on and connected (c) Replace the printer cartridge (d) Reset the printer to factory settings

50. Which command can be used to display routing tables in Linux?

- (a) netstat -r (b) route -n (c) ip route show (d) All of the above

Space for ROUGH WORK

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