

**BOOKLET SERIES 'J'**

**TIME ALLOTTED: 45 MINUTES**

**INSTRUCTIONS FOR CANDIDATES**

1. Total number of Questions 50. Each Question is of three marks.
2. One mark will be deducted for every wrong answer.
3. No marks will be deducted for un-attempted questions.

- Q1. Subtract  $(1010)_2$  from  $(1101)_2$  using 1st complement.  
(a)  $(1100)_2$  (b)  $(0011)_2$  (c)  $(1001)_2$  (d)  $(0101)_2$
- Q2. Which of the following memories must be refreshed many times per second?  
(a) Static RAM (b) Dynamic RAM  
(c) EPROM (d) ROM
- Q3. Two pipes A and B can fill a cistern in 37 minutes and 45 minutes respectively. Both pipes are opened together. The cistern will be filled in just half an hour, if the B is turned off after \_\_\_\_.  
(a) 5 min. (b) 9 min. (c) 10 min. (d) 15 min.
- Q4. A port can be \_\_\_\_\_.  
(a) strictly for input (b) strictly for output  
(c) bidirectional (d) all of the above
- Q5. Frames from one LAN can be transmitted to another LAN via the device  
(a) Router (b) Bridge (c) Repeater (d) Modem
- Q6. What are the two main types of Access Control Lists (ACLs)?  
1. Standard 2. IEEE  
3. Extended 4. Specialized  
(a) 1 and 3 (b) 2 and 4 (c) 3 and 4 (d) 1 and 2
- Q7. Ether LAN uses  
(a) Polar encoding (b) Differential manchester encoding  
(c) Manchester encoding (d) NRZ
- Q8. Two dice are tossed. The probability that the total score is a prime number is:  
(a)  $1/6$  (b)  $5/12$  (c)  $1/2$  (d)  $7/9$
- Q9. Four bits are used for packed sequence numbering in a sliding window protocol used in a computer network. What is the maximum window size?  
(a) 4 (b) 8 (c) 15 (d) 16
- Q10. Which of the following technology can give high speed RAM?  
(a) TTL (b) CMOS (c) ECL (d) NMOS
- Q11. Which memory is difficult to interface with processor?  
(a) Static memory (b) Dynamic memory  
(c) ROM (d) None of these
- Q12. Convert the decimal number, 187 to 8-bit binary.  
(a)  $10111011_2$  (b)  $11011101_2$   
(c)  $10111101_2$  (d)  $10111100_2$
- Q13. A computer program consists of  
(a) System flowchart  
(b) Program flowchart  
(c) Algorithms written in computer's language  
(d) Discrete logical steps.

- Q14. Which method bypasses the CPU for certain types of data transfer?  
 (a) Software interrupts (b) Interrupt-driven I/O  
 (c) Polled I/O (d) Direct memory access (DMA)
- Q15. From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?  
 (a) 564 (b) 645 (c) 735 (d) 756
- Q16. An Enterprise Resource Planning application is an example of a(n) \_\_\_\_\_.  
 (a) Single-user database application (b) Multiuser database application  
 (c) E-commerce database application (d) Data mining database application
- Q17. Which of the following is the 1's complement of 10?  
 (a) 01 (b) 110 (c) 11 (d) 10
- Q18. Your router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host IDs on the LAN interface attached to the router?  
 1. 172.16.1.100 2. 172.16.1.198  
 3. 172.16.2.255 4. 172.16.3.0  
 (a) 1 only (b) 2 and 3 only  
 (c) 3 and 4 only (d) None of the above
- Q19. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?  
 (a) 4 years (b) 8 years (c) 10 years (d) None of these
- Q20. The time required for the fetching and execution of one simple machine instruction is  
 (a) Delay time (b) CPU cycle (c) Real time (d) Seek time
- Q21. Which protocol reduces administrative overhead in a switched network by allowing the configuration of a new VLAN to be distributed to all the switches in a domain?  
 (a) STP (b) VTP (c) DHCP (d) ISL
- Q22. A voltage will influence current only if the circuit is \_\_\_\_\_.  
 (a) open (b) insulated (c) high resistance (d) closed
- Q23. The full adder CKT adds \_\_\_\_\_ Digit at a time  
 (a) 1 (b) 2 (c) 3 (d) 4
- Q24. Which of the following statements are true regarding the command `ip route 172.16.4.0 255.255.255.0 192.168.4.2`?  
 1. The command is used to establish a static route.  
 2. The default administrative distance is used.  
 3. The command is used to configure the default route.  
 4. The subnet mask for the source address is 255.255.255.0.  
 (a) 1 and 2 (b) 2 and 4 (c) 3 and 4 (d) All of the above
- Q25. Process is:  
 (a) contents of main memory  
 (b) a job in secondary memory  
 (c) a program in execution  
 (d) program in High level language kept on disk
- Q26. A combinational logic circuit which is used when it is desired to send data from two or more sources through a single transmission line is known as  
 (a) Encoder (b) Decoder  
 (c) Multiplexer (d) Demultiplexer

- Q27. The process of jointly establishing communication is called \_\_\_\_\_.
- (a) DMA (b) Bidirectional addressing  
(c) Multiplexing (d) Handshaking
- Q28. Look at this series: 7, 10, 8, 11, 9, 12, \_\_\_\_\_. What number should come next?
- (a) 7 (b) 10 (c) 12 (d) 13
- Q29. Which of the following services use TCP?
1. DHCP 2. SMTP 3. HTTP  
4. TFTP 5. FTP
- (a) 1 and 2 (b) 2, 3 and 5 (c) 1, 2 and 4 (d) 1, 3 and 4
- Q30. What is a stub network?
- (a) A network with more than one exit point.  
(b) A network with more than one exit and entry point.  
(c) A network with only one entry and no exit point  
(d) A network that has only one entry and exit point.
- Q31. Which resistive component is designed to be temperature sensitive?
- (a) Thermistor (b) Rheostat  
(c) Potentiometer (d) Photoconductive cell
- Q32. Which of the following is used to hold ROM, RAM, CPU and expansion cards?
- (a) Computer bus (b) Motherboard  
(c) Cache memory (d) All of the above
- Q33. Which type of gate can be used to add two bits?
- (a) Ex-OR (b) Ex-NOR  
(c) Ex-NAND (d) NOR
- Q34. Which of the following is not a basic element within the microprocessor?
- (a) Microcontroller (b) Arithmetic logic unit (ALU)  
(c) Register array (d) Control unit
- Q35. To make antenna more directional, either its size must be increased or
- (a) the number of its feed horns must be increased  
(b) the frequency of its transmission must be increased  
(c) its effective isotropic radiated power (eirp) must be increased  
(d) its footprint must be increased
- Q36. In a directional coupler
- (a) isolation (dB) equals coupling plus directivity  
(b) coupling (dB) equals isolation plus directivity  
(c) directivity (dB) equals isolation plus coupling  
(d) isolation (dB) equals (coupling) (directivity)
- Q37. Operating system
- (a) Links a program with the subroutines it references  
(b) Provides a layered, user-friendly interface  
(c) Enables a programmer to draw a flowchart  
(d) None of the above
- Q38. A transponder is a satellite equipment which
- (a) receives a signal from earth station and amplifies  
(b) changes the frequency of the received signal  
(c) retransmits the received signal  
(d) does all of the above-mentioned functions

- Q39. Tracking of extra terrestrial objects requires  
 (a) High transmitting power (b) Very sensitive receiver  
 (c) Fully steerable antenna (d) All of the above
- Q40. The parallel transmission of digital data:  
 (a) is much slower than the serial transmission of data.  
 (b) requires only one signal line between sender and receiver.  
 (c) requires as many signal lines between sender and receiver as there are data bits.  
 (d) is less expensive than the serial method of data transmission.
- Q41. The hexadecimal number 'A0' has the decimal value equivalent to  
 (a) 80 (b) 256  
 (c) 100 (d) 160
- Q42. A wrist grounding strap contains which of the following:  
 (a) Surge protector (b) Capacitor  
 (c) Voltmeter (d) Resistor
- Q43. The register which contains the instruction that is to be executed is known as  
 (a) Index register (b) Instruction register  
 (c) Memory address register (d) Memory data register
- Q44. CSMA (Carrier Sense Multiple Access) is  
 (a) A method of determining which device has access to the transmission medium at any time  
 (b) A method access control technique for multiple-access transmission media.  
 (c) A very common bit-oriented data link protocol issued by ISO.  
 (d) Network access standard for connecting stations to a circuit-switched network
- Q45. What flavour of Network Address Translation can be used to have one IP address allow many users to connect to the global Internet?  
 (a) NAT (b) Static (c) Dynamic (d) PAT
- Q46. The method for updating the main memory as soon as a word is removed from the Cache is called  
 (a) Write-through (b) write-back  
 (c) protected write (d) cache-write
- Q47. EPROM contents can be erased by exposing it to  
 (a) Ultraviolet rays. (b) Infrared rays.  
 (c) Burst of microwaves. (d) Intense heat radiations.
- Q48. A hard disk is divided into tracks which are further subdivided into:  
 (a) Clusters (b) Sectors  
 (c) Vectors (d) Heads
- Q49. In computers, subtraction is generally carried out by  
 (a) 9's complement (b) 10's complement  
 (c) 1's complement (d) 2's complement
- Q50. A JFET  
 (a) is a current-controlled device (b) has a low input resistance  
 (c) is a voltage-controlled device (d) is always forward-biased