ENGINEERING KNOWLEDGE TEST (EKT)
COMPUTER SCIENCE STREAM

BOOKLET SERIES 'G'

Set No 1/15 **Time Allotted: 45 Minutes**

Instructions for Candidates

1. **Total No. of Questions 50. Each Question is of three marks.**
2. **One mark will be deducted for every wrong answer.**
3. **No mark will be deducted for un-attempted questions**
4. **Do not write or make any mark on Question Paper.**

Q1. If the centre of a circle is (-6,8) and it passes through the origin, then equation to its tangent at the origin is

(a) 2y=x (b) 4y=3x (c) 3y=4x (d) 3x+4y=0

Q2. The liquid is flowing separately through each of two pipes whose diameters are in the ratio of 2:1, if the ratio of the velocities of flow in the two pipes by 1:2, then the ratio of the amounts of the liquid flowing per sec through the pipe will be

(a) 2:1 (b) 1:1 (c) 4:1 (d) 1:8

Q3. If $f(x) = x + |x^2 - 8|$ then the derivative of $f(x)$ at x=3 is

(a) 6 (b) 7 (c) 8 (d) -8

Q4. Given P(A) = 1/4, P(B)=1/3 and P(AUB)= 1/2. Value of P(A/B) is

(a) 1/4 (b) 1/3 (c) 1/6 (d) 1/7

Q5. The angle between two vectors a = i+2j-k and b=2i+j+k is

(a) 30 deg (b) 45 deg (c) 60 deg (d) 90 deg

Q6. Newton is unit of force. It is the unit in

(a) MKS system (b) CGS system
(c) FPS system (d) None of these

Q7. A Farad is defined as

(a) stat coulomb /volt (b) coulomb/volt
(c) coulomb x volt (d) stat coulomb x volt

Q8. Permeance of a magnetic circuit corresponds to the following quantity in electrical circuit

(a) conductivity (b) resistivity (c) conductance (d) resistance

Q9. Hydrometer is an instrument for measuring

(a) relative humidity (b) pressure of water
(c) volume of liquids (d) specific gravity

Q10. Radioactivity is a property of

(a) atomic nuclei (b) excited electron
(c) gamma rays (d) ultraviolet light

Q11. If a plane is parallel to the plane of projection, it appears

(a) true size (b) as a line or edge
(c) foreshortened (d) as an oblique surface

Q12. How is a J-K Flip Flop made to toggle

(a) J=0, K=0 (b) J=1, K=0 (c) J=0, K=1 (d) J=1, K=1

Q13. No. of flip-flops used in decade counter

(a) 3 (b) 2 (c) 4 (d) None of these

Q14. The decimal equivalent of the hexadecimal number E5 is

(a) 279 (b) 229 (c) 427 (d) 3000

Q15. Which part of the computer is used for calculating and comparing?

(a) Disk unit (b) Control unit (c) ALU (d) Modem

Q16. A CPU's processing power is measured in

(a) IPS (b) CIPS (c) MIPS (d) nano-seconds

Q17. Which computer memory is volatile?

(a) RAM (b) ROM (c) EPROM (d) PROM

Q18. The computer code for the interchange of information between terminals is

(a) ASCII (b) BCD (c) EBCDIC (d) All of these

Q19. Which of the following is not a sequential storage device?

(a) Magnetic disk (b) Magnetic tape (c) Paper tape (d) All of these

Q20. The data recording area between the blank gaps on magnetic tape is called a/an:

(a) record (b) block (c) field (d) database

Q21. On a systems flowchart, the online manual keeping of input data is identified by using the

(a) online storage symbol (b) online keyboard symbol

(c) keeping operation symbols (d) manual operation symbols

Q22. An example of a hierarchical data structure is

(a) array (b) link list (c) tree (d) ring

Q23. Which of the following system software does the job of merging the records from two files into one?

(a) security software (b) utility program

(c) networking software (d) documentation system

Q24. Virtual Memory

(a) is a method of memory allocation by which the program is subdivided into equal portions, or pages and core is subdivided into equal portions or blocks

(b) consists of those addresses that may be generated by a processor during execution of a computation

(c) is a method of allocating processor time

(d) allows multiple programs to reside in separate areas of core at the time

Q25. Which is a permanent database in the general model of compiler?

(a) literal Table (b) identifier Table

(c) terminal Table (d) source code

Q26. Operating system functions may include

(a) input/output control (b) virtual storage

(c) multi-programming (d) all of these

Q27. Moving process from main memory to disk is called

(a) scheduling (b) caching (c) swapping (d) spooling

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Q28. In which addressing mode the contents of a register specified in the instruction are first decremented, and these contents are used as the effective address of the operands?

(a) index addressing (b) indirect addressing

(c) auto increment (d) auto decrement

Q29. In order to allow only one process to enter its critical section, binary semaphore are initialized to

(a) 0 (b) 1 (c) 2 (d) 3

Q30. The outstanding Invoice file should be stared on a Pardon Access Storage Device if

(a) invoice data entry is on-line
(b) payment recording is done in a batch rode
(c) inquiries concerning payable are to be answered on-line
(d) last record points to the first record

Q31 In SQL, which command(s) is/are used to enable/disable a database trigger?

(a) ALTER TRIGGER (b) ALTER DATABASE

(c) ALTER TABLE (d) MODIFY TRIGGER

Q32. The modify operation is likely to be done after

(a) Delete (b) Look-up (c) Insert (d) all of these

Q33. Which of the following is not a logical data-base structure?

(a) tree (b) relational (c) network (d) chain

Q34. Which of the following tools is not used in modelling the new system?

(a) decision tables (b) data dictionary

(c) data-flow diagrams (d) all of these

Q35. Difference between Decision-Tables and Decision Tree is (are) :

(a) value to end user

(b) form of representation

(c) one shows the logic while other shows the process

(d) all of the above

Q36. The reservation system of Indian railways is an example of

(a) transaction processing system

(b) interactive decision support system

(c) management controls system

(d) expert system

Q37. The network layer, in reference to the OSI model, provide

(a) data link procedures that provide for the exchange of data via frames that can be sent and received

(b) the interface between the X.25 network and packet mode device

(c) the virtual circuit interface to packet-switched service

(d) all of the above

Q38. Which of the following is an important characteristic of LAN?

(a) application independent interfaces

(b) unlimited expansion

(c) low cost access for low bandwidth channels

(d) parallel transmission

Q39. Which of the following TCP/IP protocol is used for transferring electronic mail messages from one machine to another?

(a) FTP (b) SNMP (c) SMTP (d) RPC

Q40. The slowest transmission speeds are those of

(a) twisted-pair wire (b) coaxial cable

(c) fiber-optic cable (d) microwaves

Q41. How many digits of the Network User Address are known as the DNIC (Data Network Identification Code)?

(a) first three (b) first four (c) first five (d) first seven

Q42. The most flexibility in how devices are wired together is provided by

(a) bus networks (b) ring networks (c) star networks (d) T-switched networks

Q43. An FM signal contains intelligence in

(a) it's frequency variations (b) it's amplitude variations

(c) both amplitude and frequency variations (d) none of these

Q44. In PCM system

(a) a large bandwidth is required

(b) the biggest disadvantage is its incompatibility with TDM

(c) companding is used to overcome quantising noise

(d) none of the above

Q45. The all-day efficiency of a transformer depends on

(a) its copper loss (b) its iron loss

(c) both (a) & (b) (d) None of these

Q46. Slip rings for induction motor are made of

(a) copper (b) aluminium (c) carbon (d) phosphor bronze

Q47. One of the characteristic of single phase motor is that it

(a) is self-starting (b) is not self-starting

(c) requires only one winding (d) can rotate in one direction only

Q48. If the input to a differentiating ckt is saw -tooth wave then output will be----------wave

(a) Square (b) Rectangular (c) Triangular (d) Saw-tooth

Q49. Which gate acts as universal gate?

(a) AND (b) NAND (c) OR (d) EX-OR

Q50. A 32 bit microprocessor has word length equal to

(a) 1 byte (b) 2 byte (c) 4 byte (d) 8 byte