

NDG

Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi medium. If a candidate who has not opted for Hindi medium, answers in Hindi, his answers in Hindi will not be valued.

Question No. 1 is compulsory.

Answer any **four** from the rest.

Marks

1. (a) Convert the following from one number system to another number system $1 \times 5 = 5$ alongwith the working notes :

$$(i) (101.011)_2 = (\dots\dots\dots)_{10}$$

$$(ii) (173.45)_{10} = (\dots\dots\dots)_8$$

$$(iii) (3314.4)_{10} = (\dots\dots\dots)_{16}$$

$$(iv) (4B23.3)_{16} = (\dots\dots\dots)_{10}$$

$$(v) (0234.14)_8 = (\dots\dots\dots)_{10}$$

- (b) Give brief answer of the following : $1 \times 5 = 5$

(i) What is the concept of Firmware ?

(ii) Give one application area where Hierarchical database structure is most successful.

(iii) In communication protocol, what does Semantics stand for ?

(iv) Why L_1 cache memory is better than L_2 cache memory ?

(v) Give at least one condition where IT Act, 2000 shall not be applicable.

- (c) Give one or more reasons of use for each of the following : 1×5=5
- (i) Driver
 - (ii) Firewall
 - (iii) Router
 - (iv) Spooling software
 - (v) DDL.
- (d) Write True or False for each of the following with justification : 1×5=5
- (i) Thermal printer is an impact printer.
 - (ii) DML is used for processing of Data in database.
 - (iii) Browser is a client hardware device used to look at various kinds of internet resources.
 - (iv) Smart terminals are non-user programmable.
 - (v) Multiprocessing refers to the use of two or more CPUs to perform work.
2. Distinguish between the following : 4×5=20
- (i) Hardware and Software
 - (ii) Data bus and Address bus
 - (iii) Circuit switching and Packet switching
 - (iv) Compiler and Interpreter
 - (v) Social portal and Transaction portal.
3. (a) Discuss the managerial problems of File processing system. 5
- (b) Explain the salient features of Bus networking topology. 5

- (c) A labourer in a manufacturing company gets his wage as per following calculations : 10

$$\begin{aligned} \text{Basic pay} &= 10 \times N \text{ if } N \leq 10 \\ &= 12 \times N \text{ if } N \leq 15 \\ &= 15 \times N \text{ if } N > 15 \end{aligned}$$

He is also awarded a quality related bonous as per following norms :

$$\text{If } QI \leq 0.5; \quad \text{Bonus} = 0.0$$

$$\text{If } QI \leq 0.75; \quad \text{Bonus} = 10\% \text{ of basic pay}$$

$$\text{If } QI \leq 0.9; \quad \text{Bonus} = 20\% \text{ of basic pay}$$

$$\text{If } QI > 0.9; \quad \text{Bonus} = 30\% \text{ of basic pay}$$

Where N = Number of items manufactured

QI = Quality index.

For the above conditions, draw a flow chart to calculate and print basic pay, bonus and total pay received by the labourer.

4. (a) In what ways issue of data centre down time can be resolved efficiently ? 5
- (b) Discuss the importance of 'Data volume and usage analysis' in the design of database. 5
- (c) What do you mean by database ? Describe any four components of a database environment. 10
5. (a) Distinguish between the following with respect to word processing : 3+2=5
- (i) Text editor and Word processor.
- (ii) Type face and Font.
- (b) What are the different views available in MS-POWER POINT to make the presentation ? How can one switch over from one view to another view ? 5

- (c) Explain the use of following tools related to MS-WORD : 1×5=5
- (i) Drop cap
 - (ii) Section break
 - (iii) Auto text
 - (iv) Auto fit
 - (v) Bullet
- (d) Define the following functions with respect to Spread sheet : 1×5=5
- (i) NPER
 - (ii) PROPER
 - (iii) PMT
 - (iv) ROUND
 - (v) POWER
6. (a) Explain an auditing technique suitable for on-line real-time applications such as banking. 5
- (b) Explain the various features required in a Generalized Audit Package. 5
- (c) Describe the compositions and powers of Cyber Regulation Appellate Tribunal. 5
- (d) List the possible threats and vulnerabilities to the security of system assets. 5
7. Write short notes on any **four** of the following : 5×4=20
- (i) Bubble Memory
 - (ii) MICR
 - (iii) Storage Area Network
 - (iv) Object Oriented Database
 - (v) Encryption.