Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2078/2079, Chaitra/Baishakh

Program: Diploma in Computer Engineering **Full Marks: 80**

Year/ Part: II/II (2013, 2018 New+Old) **Pass Marks: 32**

Subject: Computer Repair & Maintenance **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight Questions.

1. Define the terms data, program, software and information. [4x2.5=10]
2. What are general and special purpose computer? Differentiate between analog and digital computer. [2+8]
3. Define form factor and drive bay. Explain in detail the working principle of SMPS. [2+8]
4. Differentiate between : [5+5]
   a) RAM and ROM b) CRT and LCD
5. Define monitor. List out its characteristics. Explain how CRT works. [2+3+5]
6. What is UPS? Differentiate between Impact and non-impact printer. [3+7]
7. Write in details how the whole computer system can be cared well. [10]
8. Define system software and application software. Write short notes on 3 types of viruses you have encountered. What measures you have applied for its solution? [3+3+4]
9. Write short notes on : **(Any Two)** [2x5=10]
   i) Back up and Disaster recovery
   ii) Machine cycle
   iii) BIOS

Good Luck !

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Regular/Back Exam-2078, Chaitra-2079 Baishakh

Program:	**Diploma in IT/Computer Engineering**	**Full Marks: 80**
Year/Part:	**II/II (2008, 2016, 2013, 2018)**	**Pass Marks: 32**
Subject:	**Statistics and Probability**	**Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A'

[3×10=30]

Attempt ALL questions.

1. What is statistics? Write down important of statistics.
2. Find the regression equation of X on Y and Y on X from the following data:

X	5	9	13	17	21
Y	3	8	13	18	23

3. The table given below presents the frequency distribution of weight s of 80 apples selected at random from a bit consignment.

Weight (In gms.)	110-119	120-129	130-139	140-149	150-159	160-169	170-179	180-189
Frequency	5	7	12	20	16	10	7	3

Find median, two quartiles, 4th decile and 80th percentile.

Group 'B'

[10×5=50]

Attempt ALL questions.

4. List out the methods of collecting primary data.
5. Find the geometric mean and harmonic mean of 32, 35, 36, 37, 39, 41, 43.
6. Find mean deviation from mean and its coefficient from the following data:

Class	0-10	10-20	20-30	30-40	40-50
Frequency	5	8	15	16	6

7. Calculate the mean and coefficient of variation from the following data:

Profit (in Rs.)	0-10	10-20	20-30	30-40	40-50
No. of Shops	8	13	16	8	5

8. A bag contains 8 white and 3 red balls. If two balls are drawn at random, find the probability that (i) both are white (ii) both are red (iii) one is of each color.

Cont. .....

9. Draw a histogram and frequency polygon of the following data:

Temp (°C)	5-10	10-15	15-20	20-25	25-30	30-35
No. of Days	2	5	12	18	10	3

10. Calculate Karl Pearson's coefficient of correlation from the following data:

X	6	2	10	4	8
Y	9	11	9	8	7

The arithmetic means of X and Y series are 6 and 8 respectively.

11. The probability of hitting a target is $\frac{1}{5}$. If six hitting are made, find the probability that: (i) none will strike the target (ii) exactly 2 will strike the target.

12. A chance that A, B and C can solve a problem is $\frac{1}{3}, \frac{1}{4}$ and $\frac{1}{5}$ respectively. Find the probability that the problem will be solved.

13. On average there are four road accidents per week in Kathmandu. Using Poisson Distribution, find the probability of:
    (a) no accident per week
    (b) 3 accidents per week
    (c) at least 2 accidents per week.

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Program: Diploma in Computer Engineering **Full Marks: 80**

Year/ Part: II/II (2018 New) **Pass Marks: 32**

Subject: Data Communication **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Five Questions.

1. a) What do you mean by PSTN? Explain digital communication system model with block diagram. [2+6]
   b) List and explain transmission impairment. Differentiate asynchronous and synchronous transmission; with example. [4+4]
2. a) Define channel capacity. Classify the different types of transmission media and explain one of them in brief. [2+2+4]
   b) What is wireless propagation? Explain different types of network topology. [2+6]
3. a) What is multiplexing and its requirements in data communication. Explain TDM and its types briefly. [2+6]
   b) What is multiple access techniques? Explain FDMA in brief with proper diagram. [2+6]
4. a) What is line coding? Explain pulse code modulation with block diagram. [2+6]
   b) What do you mean by PCM transmission format (T1 & E1)? Explain in brief. [2+6]
5. a) Define switching techniques. Compare message switching, circuit switching and packet switching. [2+6]
   b) Classify the different types of switching system used in communication system. Explain manual switching in brief. [4+4]
6. Write short notes on : **(Any Four)** [4x4=16]
   i) Analog Vs Digital data transmission
   ii) Time division switching
   iii) Quantization
   iv) Companding
   v) Electronic switching

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Program: Diploma in Computer Engineering **Full Marks: 80**

Year/ Part: II/II (2018 New) **Pass Marks: 32**

Subject: Computer Architecture **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight Questions.

1. Define the term fetch and decode. Explain different types of instruction. [4+6]
2. Explain the common bus system with diagram. [10]
3. Describe about instruction cycle. Explain briefly about Micro-program sequencer. [5+5]
4. Differentiate between RISC and CISC architecture. [10]
5. Write down the different types of interrupt. Describe about data manipulation instructions. [6+4]
6. Write down Booth Multiplication Algorithm. [10]
7. Define main memory and auxiliary memory. Discuss briefly on address mapping using pages. [4+6]
8. What is pipelining? Explain the terms delayed load and delayed branch. [2+8]
9. Write short notes on : **(Any Two)** [2x5=10]
   a) Arithmetic and Instruction pipeline
   b) Signed 2's complement
   c) Control memory

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Program: Diploma in Computer Engineering **Full Marks: 80**

Year/ Part: II/II (2018 New) **Pass Marks: 32**

Subject: Visual Programming **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Five Questions.

1. a) Define IDE. Explain elements of user interface. [2+6]
   b) What is event driven programming? Differentiate betⁿ the MDI and SDI. [2+6]
2. a) Discuss various types of access modifiers with suitable examples. [8]
   b) What is procedure? Explain the procedures supported by VB with example. [2+6]
3. a) Write down the steps of adding menu to a form. [8]
   b) Write code and design form for loading, closing showing and hiding form. [8]
4. a) Differentiate between event driven approach and procedure driven approach. [4]
   b) Explain Common dialog Control box. Also write the usage of Common dialog control and active-x data Control. [5+5+4]
5. a) Explain the file handling process with an examples of different file modes. [8]
   b) What is database management system? Write the steps of connection of DB using ADODC. [2+6]
6. Write short notes on : **(Any Four)** [4x4=16]
   i) Exception handling
   ii) Timer and Array
   iii) List box Vs combo box
   iv) Picture box and frame
   v) Form and Basic control

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Program: Diploma in Computer Engineering **Full Marks: 80**

Year/ Part: II/II (2018 New) **Pass Marks: 32**

Subject: System Analysis & Design **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight Questions.

1. Define a system. Explain the different phase of SDLC and their uses. [10]
2. What is information system? Explain various types of information system. [4+6]
3. Why good inter-personal Communication is required for a system analyst? Explain different methods of collecting information. [3+7]
4. a) Design a DFD for library management system. [5]
   b) Discuss the process of designing forms and reports in detail. [5]
5. a) What are the benefits of using Normalization? Discuss 1NF and 2NF with example. [6]
   b) What is decision table? Differentiate it with decision tree with example. [4]
6. a) What is ER Diagram? Explain with diagram. [5]
   b) Define data dictionary and explain process of transforming ER diagram into relations. [2+3]
7. Why do you need high quality software? Discuss different software quality assurance activities. [10]
8. Create a decision tree to represent the logic of payroll system described in the following narrative. There are two types of employees: salaried and hourly. All salaried employees get basic salary. Hourly wage is calculated for hourly worker. For hourly worker, if hours worked is less than 40 absences report is also produced and if it is greater than 40 overtime is also calculated. [10]
9. Write short notes on : **(Any Two)** [2x5=10]
   i) Software measurement process
   ii) Spiral model
   iii) Class and object diagram

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Program: Diploma in Computer Engineering **Full Marks: 40**

Year/ Part: II/II (2018 New) **Pass Marks: 16**

Subject: Computer Graphics **Time: 1.5 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Eight Questions.

1. Define computer graphics. Write down the major applications of computer graphics. [1+4]
2. Explain Bresenham's line drawing algorithm. [5]
3. Write down principles of web graphics design. [5]
4. Explain surface detection techniques. [5]
5. Differentiate raster and Vector display technology. [5]
6. What is projection? Differentiate between parallel and perspective projection. [1+4]
7. Define shading model. Explain about Gouraud shading [1+4]
8. Explain various steps of animation. [5]
9. Write short notes on : **(Any Two)** [2x2.5=10]
   i) 2D-Rotation
   ii) Morphing
   iii) CAD Vs CAM

Good Luck !