TRIBHUVAN UNIVERSITY
Faculty of Education
2077
Bachelor/5th Semester **Symbol No.: .....**
Ed. 451 Fundamental of Curriculum

Group "A" 10 X 1 mark =10

Attempt all questions Tick (√) the best answers

1. Which represents the traditional meaning of curriculum?
   a. Plan b. Objectives
   c. Course of study d. Experiences
2. "Education is life, not a preparation for uncertain future" is the this perspective represents
   a. Pragmatism b. Realism
   c. Naturalism d. Idealism
3. Emphasis of "preservation of life" is an educational motto of....
   a. Idealism b. Naturalism
   c. Pragmatism d. Realism
4. What is the first level of cognitive domain?
   a. Analysis b. Comprehension
   c. Application d. Knowledge
5. Which action verb is related to psychomotor domain of objectives?
   a. To catch b. To select
   c. To present d. To follow
6. What is the first and foremost element in the curriculum?
   a. Organization b. Content
   c. Objectives d. Evaluation
7. The best answer of "what to teach"? is concerned with
   a. Content b. Objectives
   c. Methods d. Evaluation
8. Which of the following is the main source of educational objectives?
   a. Teacher b. School
   c. Student d. Society
9. What was the structure of school level education according to NESP 2028?
   a. 3+3+4 b. 3+4+3
   c. 4+3+3 d. 5+3+2
10. The Third Step involved in Curriculum development process followed in Nepal is
    a. discussion in subject committee.
    b. collection of opinions and suggestions.
    c. formation of learning outcomes.
    d. formation of drafting committee.

TRIBHUVAN UNIVERSITY
2077
Bachelor/ Education /5th Semester Full Marks: 60
Ed. 451 Fundamental of Curriculum 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 all questions

Group "B" 6 X 5 marks =30

1. "Curriculum as an objective" Elaborate this statement.
   OR
   What are the advantage of curriculum as experiences over curriculum as subject.
2. Elaborate the curriculum of the pragmatism.
3. Illustrate the criteria of learning experiences and explain any one of them.
4. How explosion of knowledge influence the curriculum development?
   OR
   Suppose you are teaching students with hearing disabilities what needs will you address while teaching them?
5. List the goals of Basic Level as stated in existing curriculum.
6. Present the existing evaluation system of secondary education of Nepal.

Group "C" 2 X 10 marks =20

7. State the classification of educational objectives according to B.S. Bloom and explain the different level of psychomotor domain with suitable examples.
8. Explain the steps of school level Curriculum Development process followed in Nepal.
   OR
   What are the differences between the idealism and Naturalism in terms of....
   a. curriculum.
   b. nature of learner.
   c. teaching methods.

TRIBHUVAN UNIVERSITY
Faculty of Education
2077
Bachelors/5th Semester **Symbol No.: .....**
ICT.Ed.455 – Java Programming

Group "A" 10 X 1 mark =10

Attempt all questions Tick (√) the best answers

1. What stands for JRE?
   a. Java Runtime Environment
   b. JVM Runtime Environment
   c. Java Robust Environment
   d. JVM Robust Environment
2. Which statement is used for terminating loops?
   a. break b. terminate
   c. final d. None of the above
3. Which statement is false about constructors?
   a. It does not have return type
   b. Its name is same as the name of class
   c. It cannot contain arguments
   d. It is invoked automatically
4. Which of the following is valid syntax of single inheritance?
   a. class extends class B b. class A extends B
   c. class A: class B d. class A: B
5. Which keyword is used for accessing members of parent class?
   a. parent b. base
   c. super d. sup
6. How many numbers of threads can be in ready state at a time?
   a. one b. two
   c. four d. many
7. Which of the following is byte stream class?
   a. FileReader b. FileWriter
   c. FileInputStream d. All of the above
8. Which package contains classes related to event handling?
   a. Java.awt b. Javax.swing
   c. Java.awt.event d. Javax.swing.event
9. What is name of method used for running Insert commands in JDBC?
   a. execute b. executeUpdate
   c. executeQuery d. executeInsert
10. Which of the following is default access specifier for interfaces?
    a. private b. public
    c. protected d. default

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TRIBHUVAN UNIVERSITY
2077
Bachelors/ Education /5th Semester Full Marks: 40
ICT.Ed.455 – Java 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 all questions

Group "B" 6 X 5 marks =30

1. What is JVM? Explain features of java programming language.
2. What is constructor? Write a java program to demonstrate different types of constructors.
   OR
   What is method overloading? Explain method loading with suitable example.
3. What are different types of inheritances? Write a java program to demonstrate multilevel inheritance?
   OR
   How interface differs from class? Explain the concept of method overriding with example.
4. What are different categories of exceptions? Explain use of throws and throw clause with example.
5. What is stream? Discuss the character stream classes of java with suitable example
6. Differentiate between component and container? Explain handling of action events with suitable example.

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TRIBHUVAN UNIVERSITY
Faculty of Education
2077
Bachelors/5th Semester **Symbol No.:** .....
ICT.Ed.456 – Data Communication and Network

Group "A" 10 X 1 mark =10

Attempt all questions Tick (√) the best answers

1. In which electromagnetic waves ranging in frequencies between 3 KHz and 1 GHz?
   a. High frequency b. Radio waves
   c. Infrared d. Microwaves
2. Which modulation is based on Frequency shifting keying?
   a. Amplitude Modulation b. Phase Modulation
   c. frequency Modulation d. Digital to Digital Modulation
3. Which network device is used in analog transmission to achieve longer distances?
   a. Repeaters b. Routers
   c. Boosters d. Amplifiers
4. Which layer establishes, maintains, and synchronizes the interaction between communicating system?
   a. Session b. Network
   c. Transport d. Presentation
5. Which address in the header of a packet in a datagram network normally remains the same during the entire journey of the packet?
   a. Source b. Destination
   c. Local d. Physical
6. In which routing method routing path is precomputed by source, possibly by table lookup, placed in packet header?
   a. Destination routing b. Source switching
   c. Source routing d. Destination switching
7. In which class the following IPv4 address: 126.5.6.7 is based?
   a. Class A b. Class B
   c. Class C d. Class D
8. Which protocol is used to get files from another computer on the internet by using
   a. HTTP b. TELNET
   c. UTP d. FTP
9. Which protocol assists in providing the remote login access over the network especially in an application layer of TCP/IP reference model?
   a. File Transfer Protocol (FTP)
   b. TELNET (Network Terminal Protocol)
   c. Simple Network Management Protocol (SNMP)
   d. Simple Mail transfer Protocol (SMTP)
10. Which standard defines wireless LAN standard?
    a. IEEE 802.3 b. IEEE 802.5
    c. IEEE 802.11 d. IEEE 802.2

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TRIBHUVAN UNIVERSITY
2077
Bachelors/ Education /5th Semester Full Marks: 60
ICT.Ed.456 – Data Communication & Network 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 all questions

Group "B" 6 X 5 marks =30

1. What do you mean by digital communication? Discuss briefly components of digital communication system.
2. Define transmission media? Explain in details types of transmission media with block diagram.
3. Explain switching techniques in data transmission mechanism? Compare and contrast the circuit switching and packet switching.

   OR

   Describe the Frequency Division Multiplexing and Time Division Multiplexing techniques.
4. Discuss briefly computer network. List the different network topology and explain any one of them in details with block diagram.
5. What is protocol in internet? Explain the various classes of IP address in details.

   OR

   What do you mean by subnetting? Describe the ARP and DHCP protocols.
6. Describe LAN technology on the basis of IEEE 802 standards. Explain in details IEEE 802.11 MAC layer standards.

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TRIBHUVAN UNIVERSITY
Faculty of Education
2077

Bachelors/5th Semester **Symbol No.: .....**
ICT.Ed.457 – Software Engineering & Project Management

Group "A" 10 X 1 mark =10

Attempt all questions Tick (√) the best answers

1. Which phase of the RUP is used to establish a business case for the system?
   a. Transition b. Elaboration
   c. Construction d. Inception
2. Which one of the following models is not suitable for accommodating any change?
   a. Build & Fix Model b. RAD Model
   c. Prototyping Model d. Waterfall Model
3. Which one of the following is a functional requirement?
   a. Maintainability b. Portability
   c. Robustness d. System Login
4. What is use of Gantt Chart?
   a. Control cost of all the activities.
   b. Provide a schedule of the activities.
   c. Track the cost of the activities.
   d. Provide a schedule and track progress of activities.
5. Which is a depiction of the interactions among objects during a certain period of time?
   a. sequence diagram. b. deployment diagram.
   c. composition diagram. d. class diagram.
6. Which design identifies the software as a system with many components interacting with each other?
   a. Architectural design b. Pattern design
   c. High-level design d. Component Design
7. Which of the following process is concerned with analyzing the costs and benefits of proposed changes?
   a. Change management b. System building
   c. Version management d. Release management
8. Which of the testing technique that requires preparing test cases to exercise the internal logic of a software module?
   a. behavioral software testing
   b. grey-box testing
   c. black-box testing
   d. white-box testing
9. Which testing is concerned with behavior of whole product as per specified requirements?
   a. Unit testing b. Component testing
   c. System testing d. Integration testing
10. What is CMM model
    a. automatically maintain the software reliability
    b. improve the software process.
    c. test the software
    d. all of the mentioned

TRIBHUVAN UNIVERSITY
2077
Bachelors/ Education /5th Semester Full Marks: 40
ICT.Ed.457 – Software Engineering & Project Mgmt. 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 all questions

Group "B" 6 X 5 marks =30

1. List the software development process activities. Explain the Rapid Application Development (RAD) model.

   OR

   Why agile software development principles are adoptable in software development? Describe the XP methodology.
2. What is software requirement specification (SRS)? Describe its components.

   OR

   Explain the software requirement engineering process with example of each process.
3. What is software project management? Describe software risk analysis techniques.
4. Demonstrate the class diagram and sequence diagram with reference online student admission system in school.
5. What is software re-engineering? Why software maintenance is important? Describe.
6. Compare the software Quality Control and Quality Assurance with indicators.

TRIBHUVAN UNIVERSITY
Faculty of Education
2077
Bachelor/5th Semester **Symbol No.: .....**
Math. Ed. 455 Numerical Analysis

Group "A" 10 X 1 mark =10

Attempt all questions Tick (√) the best answers

1. What is the number when 30.05678 is rounded off to four significant figures?
   a. 30.0567 b. 30.05
   c. 30.06 d. 30.0568
2. Which is the following is a transcendental function?
   a. $\varphi(x) = sin^2x - x^2 - 2$
   b. $f(x) = x^2 + 3x + 2$
   c. $x^2 + y^2 = a^2$
   d. $g(x) = x + 2$
3. Newton - Raphson iteration formula is given by
   a. $x_n = x_{n+1} - \frac{f(x_n)}{f'(x_n)}$ b. $x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$
   c. $x_{n+1} = x_n - \frac{f'(x_n)}{f(x_n)}$ d. $x_n = x_{n+1} - \frac{f'(x_n)}{f(x_n)}$
4. While solving the system of linear equations, which one of the following methods require back substitution?
   a. Gauss - Jordan b. Gauss - Siedel
   c. Gauss - Elimination d. Iteration method
5. Which one of the following is true?
   a. $\Delta = 1 - E^{-1}$ b. $\Delta = E - 1$
   c. $\Delta = E^{-1} - 1$ d. $\Delta = 1 - E$
6. The relation between central difference δ and averaging operator μ is given by —
   a. $\mu = \frac{1}{2}(E^{1/2} + E^{-1/2})$ b. $\mu = 1 + \left(\frac{1}{4}\right)\delta^2$
   c. $\mu = E^{1/2} + E^{-1/2}$ d. $\mu = 1 + \left(\frac{1}{2}\right)\delta^2$
7. In numerical integration, the number of strips should have to be a multiple of six for using?
   a. Simpson's $\frac{1}{3}$ – rule b. Simpson's $\frac{3}{8}$ – rule
   c. Boole's rule d. Weddle's rule
8. Newton's backward interpolation formula is appropriate in order to interpolate the value of y when it is
   a. near at the beginning of the tabular values
   b. near at the centre of the tabular values
   c. within the given range of tabular values
   d. near at the end of the tabular values.
9. The relation between ordinary and divided difference is given by
   a. $[x_0, x_1, x_2, \ldots x_n] = \frac{1}{n!}\Delta^n f(x_0)$
   b. $[x_0, x_1, x_2, \ldots x_n] = \frac{1}{h^n}\Delta^n f(x_0)$
   c. $[x_0, x_1, x_2, \ldots x_n] = \frac{1}{h^n n!}\Delta^n f(x_n)$
   d. $[x_0, x_1, x_2, \ldots x_n] = \frac{1}{h^n n!}\Delta^n f(x_0)$
10. Which one of the following is the chain rule of derivative?
    a. $\frac{dy}{dx} = \frac{dx}{du} \cdot \frac{dy}{du}$ b. $\frac{dy}{dx} = \frac{dy}{du} \cdot \frac{du}{dx}$
    c. $\frac{dy}{dx} = \frac{dx}{du} \cdot \frac{du}{dy}$ d. $\frac{dy}{dx} = \frac{du}{dy} \cdot \frac{du}{dx}$

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TRIBHUVAN UNIVERSITY
2077
Bachelor/ Education /5th Semester Full Marks: 60
Math. Ed. 455 Numerical Analysis 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 all questions

Group "B" 6 X 5 marks =30

1. Construct a table of central difference for the following data:

x	x_0	x_1	x_2	x_3	x_4	x_5	x_6
y	y_0	y_1	y_2	y_3	y_4	y_5	y_6

2. If δ is the central difference operator and E is the shift operator, then show that $\delta = E^{1/2} - E^{-1/2}$

   OR

   Using the definition of forward difference, prove that
   $\Delta^3 y_0 = y_3 - 3y_2 + 3y_1 - y_0$
3. Find the value of $log_{10}(301)$ with the help of following data:

x	300	304	305	307
y = f(x)	2.4771	2.4829	2.4843	2.4871

   by using Newton's divided difference formula.
4. The table below gives the values of tan x for $0.10 \leq x \leq 0.30$:

x	0.10	0.15	0.20	0.25	0.30
y = tan x	0.1003	0.1511	0.2027	0.2533	0.3093

   Using Newton's backward difference interpolation formula, find the value of tan (0.26).
5. Find $\frac{dy}{dx}$ at $x = 0.1$ from the following table

x	0	0.1	0.2	0.3	0.4
y	1.0	0.9975	0.9900	0.9776	0.9604

6. By using Simpson's $\frac{1}{3}$ – rule, evaluate $I = \int_0^1 \frac{1}{1+x} dx$ with $h = 0.5$.

   OR

   Using the trapezoidal rule and the following data, estimate $\int_{0.1}^{0.3} e^x dx$

x	0.1	0.15	0.2	0.25	0.3
e^x	1.10517	1.16183	1.22140	1.28403	1.34986

Group "C" 2 X 10 marks =20

7. Use the Newton-Raphson method to find a root of the equation $x^3 - 2x - 5 = 0$.

   OR

   Solve $3xe^x = 1$ to 3 decimal places by the method of false position.
8. Solve the system of equations $2x + y + z = 10$
   $3x + 2y + 3z = 18$
   $and\ x + 4y - 9z = 16$
   by using Gauss-Jordan method.

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