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VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. II Year (E.E.E.) I-Semester Supplementary Examinations, May/June-2017

Electrical Measurements and Instruments

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 X 2=20 Marks)

1. Compare analog and digital instruments.
2. What are the essential forces required in an electrical measuring instrument?
3. What is the function of braking system in an energy meter?
4. What are the conditions for synchronization of Alternators?
5. What are the merits of Kelvin's double bridge over a Wheat Stone Bridge?
6. List the various bridges used for measurement of unknown capacitance.
7. What is iron loss and how is it measured?
8. Draw the B-H curve and hysteresis loop with all specifications.
9. Draw the circuit diagram for calibration of voltmeter using potentiometer.
10. Why Secondary of CT should never be open circuited while the primary is energized?

Part-B (5 × 10 = 50 Marks)

(All bits carry equal marks)

11. a) Derive torque expression for a dynamometer type watt-meter.
 b) How do you measure reactive power consumed in a 3- ϕ circuit using single watt-meter.
12. a) Explain the construction and principle of operation of Maximum Demand indicator.
 b) With neat diagram explain the construction and working of electrical resonance type frequency meter.
13. a) What is the function of Schering's bridge? Obtain the balance equation of the bridge.
 b) Describe the principle of operation of Kelvin's double bridge with necessary diagram.
14. a) Describe the method of reversal for plotting B-H curve of a ring specimen.
 b) How do you calibrate the Ballistic Galvanometer by Hibbert's magnetic standard?
15. a) Describe the working principle of polar type AC potentiometer.
 b) Explain the method of calibrating wattmeter using a potentiometer.
16. a) How do you measure active power consumed in a 3- ϕ balanced circuit using single watt-meter.
 b) Explain principle of operation of Synchronoscope.
17. Write short notes on any *two* of the following:
 - a) Ammeter-voltmeter method for measurement of resistance.
 - b) Measurement of 'B' in a ring specimen.
 - c) Calibration of ammeter by using D.C. potentiometer.

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19. Choose the correct statement about requirements management.
 - a) It is a continuous process throughout a project.
 - b) It helps keep the project team organized.
 - c) It helps ensure the business application you build validates and meets the needs of all customers and stakeholders.
 - d) All the given options are correct
20. TinyStars international school is automating the admission process using Pega. All activities starting from filling the admission form till admission confirmation are automated in the Pega application. In Pega, the basic template to model the entire admission process is called as ____
 - a) Class
 - b) Case
 - c) Case Type
 - d) Stage
21. Get Well Hospitals is using a Pega application for Patient case processing. Every patient is considered as a case and the primary diagnosis reports will be uploaded into a case type, called Primary Record. If the patient is recommended for a specialist diagnosis, then it will be done in another case called Specialist Record. How do you achieve this in Pega?
 - a) Create a Specialist Record case using create case utility as part of the life cycle of Primary Record
 - b) Change the stage to new stage called Specialist Record
 - c) Change the process flow to another case process flow
 - d) Cannot be done in Pega
22. Pavani Industries uses an application for their operations. The customers are complaining about the time taken by the application to show the product list. Now their requirement is to decrease the time taken to retrieve the product records, by 50%. What kind of a requirement is this?
 - a) Functional
 - b) Non-functional
 - c) Change control
 - d) Enterprise standard
23. Match the following:

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|------------------------------------|---------------------|
| i. Specifies how to achieve a need | A. Analysis |
| ii. Specifies what is the need | B. Specification |
| iii. Works with interactive charts | C. Requirement |
| a) i-B, ii-C, iii-A | b) i-C, ii-B, iii-A |
| | c) i-A, ii-C, iii-B |
| | d) i-A, ii-B, iii-C |
24. A student enrolled for a course called CSA, at certification stage student wants to postpone the CSA exam for one week, to achieve this which of the following options can be used?
 - a) Add local action
 - b) Add declare expression
 - c) Add alternate stages
 - d) Add correspondence
25. Employee should be notified after the loan request has been successfully approved by manager, which of the following smart shapes can be used to notify employee?
 - a) Change stage
 - b) Send email
 - c) Change case
 - d) Create pdf
26. John created a case type and wants to provide information to the end users to help them complete their work effectively. Which of the following options can be used?
 - a) Add instructions
 - b) Add process
 - c) Add stages
 - d) Add user actions
27. Employee needs to submit multiple types of expenses with attributes such as expense item, expense amount, expense date etc. To capture this data for multiple types of expenses, one must configure ____
 - a) Picklist
 - b) Field group
 - c) Field group list
 - d) Text paragraph
28. In online shopping when a customer adds a new product to the cart, the total price should be automatically calculated. To achieve this, which of the following can be used?
 - a) Declarative processing
 - b) Data transform
 - c) Data management
 - d) Decision tree
29. _____ is the mechanism of copying data within the case hierarchy.
 - a) Decision table
 - b) Data propagation
 - c) Circumstancing
 - d) Routing
30. During case processing, each page remains in memory in a structure known as ____
 - a) pyDefault
 - b) Clipboard
 - c) Tracer
 - d) Live UI
31. The data corresponding to a data type will be stored as _____, inside pyWorkPage of the case.
 - a) Embedded page
 - b) Child page
 - c) pyDefault page
 - d) Parent page
32. There is a parent case type called "Passport Application" and a child case type called "Police Verification". The case data should be copied from parent case to the child case. To achieve this which of the following can be used?
 - a) Data propagation option on parent case
 - b) Data page
 - c) Data propagation option on child case
 - d) Declare expression

33. _____ allows you to add connectors and flow shapes that reference rules, even if those rules do not yet exist.
 a) Connector mode b) Flow action mode c) Draft mode d) Flow mode
34. Which of the following API Activities can be used for creating and sending emails?
 a) UpdateStatus b) Addwork c) CorrNew d) AddCoveredWork
35. A student can submit the assignment in 5 days, but a student must finish the assignment within 7 days in any case. Even after 7 days if the student hasn't submitted his assignment, which of the following SLA options can be used to configure an additional day as extension?
 a) Goal b) Dead line c) Passed dead line d) All of the above
36. _____ is a list of open assignments for specific users.
 a) Worklist b) Workgroup c) Case process d) Work queue
37. In a correspondence rule, _____ icon is used to include content in other rules such as paragraphs, sections and correspondence fragments.
 a) Insert property b) Source c) Insert rule d) Pages & classes
38. If we want to access a table with more advanced SQL queries like complex joins etc., we must use _____.
 a) Database Table Class Mapping tool b) SQL Connector
 c) Report Definition d) Data Page
39. Along with data transforms, we can use _____ such that if a user indicates billing address and shipping address are same, then billing address values can be copied into shipping address.
 a) When condition b) Decision table c) Decision tree d) Map value
40. The approval process for a leave request case has the following conditions:
 i) If the leave duration is less than 10 days, then the leave request must be approved by the manager
 ii) If the leave duration is more than 10 days and the employee belongs to ABC department, then the leave request must be approved by HR manager
 iii) If the leave duration is more than 10 days and the employee belongs to ABC department, then the leave request must be approved by HR Senior Manager.
 Which decision rule can be used to model the above scenario as a best practice?
 a) Decision tree b) When rule c) Declare expression d) Activity
41. A patient wants to add a doctor to a dispute resolution case. The receptionist selects the _____ flow action to add the lawyer as an interested party.
 a) VOE b) addWorkObjectParty c) AddParty d) AddVOE
42. Match the following w.r.t the source of a data page:
 i) Load activity A. return a specific data object mapped in the application
 ii) Report Definition B. obtain data from external data source
 iii) Look-up C. used for special situations where none of the other options are suitable
 iv) Connector D. to return a list of data objects mapped in the application
 a) i-C, ii- B, iii-A, iv- D b) i-B, ii-C, iii-D, iv-1
 c) i-A, ii- B, iii-C, iv- D d) i-C, ii-D, iii-A, iv-B
43. Match the below buttons of Tracer with appropriate functions:
 i. Remote Tracer A. Select rule sets, rule types and events to trace.
 ii. Watch B. To trace events in another requestor session
 iii. Breakpoints C. Monitor a variable to detect when its value changes
 iv. Settings D. Identify when the application reaches a specific step in activity
 a) i-C, ii-D, iii-A, iv-B b) i-B, ii-C, iii-D, iv-A c) i-A, ii- B, iii-C, iv- D d) i-D, ii- C, iii-B, iv- A
44. _____ is holds default urgency of case type and its default value is _____.
 a) .pxUrgencyWork , 90 b) .pyUrgencyAssignAdjust , 90
 c) .pxUrgencyAssignSLA , 10 d) .pxUrgencyWork , 10
45. We can create single application with a responsive user interface that adapts to multiple devices. _____ enables layout to automatically adjust to rendering devices such as elements can move around, resize or completely disappear depending on the resolution and size of a screen.
 a) Dynamic UI b) Responsive UI c) Harness d) Grid layout

46. Applying _____ increases the likelihood that your application is delivered on time and meets all of its design requirements.
 a) Best practices b) DBO c) Requirements d) Specifications
47. You use _____ when you cannot predict or control the value a user will enter in a form.
 a) Data transform b) DCO c) SLA d) Validation rules
48. While developing an online application using Pega, the developer wants to ensure that the end-user enters a valid email address. Which of the following options can be used for this requirement?
 a) Validate rule b) Edit validate rule c) CorrNew d) Work object
49. When applying for Life insurance, customer will come across a field called as “interested to add nominee?” with a check box. If the customer selects this checkbox, the system will display additional fields to collect interested nominee details. To configure this, which of the following can be used?
 a) Use activity b) Use event-action set c) Use data transform d) Use validation rule
50. _____ can include property references, for example we can include customer’s name.
 a) Paragraphs b) Dynamic UI c) Event-action model d) Live UI
51. Every Pega UI is built inside a _____.
 a) Harness rule b) Section rule c) Portal rule d) Layout
52. You are calculating the value of a home insurance quote based on more than 20 property values such as location, tax assessment, appraisal value and land area etc., which are collected in large number of forms. When we use _____, the home insurance quote declare expression recalculates the value every time user enters or changes any of these 20 values. If you are going to display insurance quote after collecting all the values use _____.
 a) Forward chaining, backward chaining b) Backward chaining, forward chaining
 c) Forward chaining, forward chaining d) Backward chaining, procedural processing
53. An employee uses the HRMS application on his desktop/mobile or tablet, so that when an employee is on business trip he/she can claim/raise or apply leaves or checks any other updates. To provide this type of optimal user experience on different devices we should use _____.
 a) Dynamic UI b) Action-event set c) Responsive UI behaviour d) Complex process flows
54. Match the following:
 i. User pages A. conversion rates which are determined by the currency markets
 ii. Data pages B. typically created and configured by the senior system and lead system architects
 iii. System pages C. clipboard page containing information such as logged in user and their current time zone
 iv. Linked property pages D. contains pages created due to user actions
 a) i-C, ii- B, iii-A, iv- D b) i-B, ii-C, iii-D, iv-A c) i-A, ii- B, iii-C, iv- D d) i-D, ii-A, iii-C, iv-D
55. _____ defines permissible values for data fields such that by limiting the input values to valid options reduces errors and allows for automation
 a) Integration b) Connector c) Reference Data d) Data transform
56. Pega applications store each case as a unique record in a relational database. Within each record, Pega stores case data in a _____ field.
 a) CLOB b) BLOB c) VARCHAR d) DECIMAL
57. The Hybrid data storage model allows applications to store data both in dedicated data fields and in a BLOB field. To store property values in a dedicated column in the database table, you must _____ the property for reporting.
 a) Minimize b) Maximize c) Optimize d) Prioritize
58. Which of the following is a type of circumstancing conditions?
 a) As of date b) Single value circumstancing
 b) Multiple value circumstancing d) All the given options are correct
59. While shopping on ABC online application, the customer is allowed to cancel the order at any stage of the product order life cycle. To achieve this we must configure?
 a) Add local action b) Add alternate stage c) Add instructions d) Add optional process

