

BRAINWARE UNIVERSITY

Term End Examination 2021 - 22 Programme – Diploma in Mechanical Engineering Course Name – Industrial Robotics and Automation Course Code - DME604 (Semester VI)

Time allotted: 1 Hrs.15 Min. Full Marks: 60 [The figure in the margin indicates full marks.] Group-A (Multiple Choice Type Question) 1 x 60=60 Choose the correct alternative from the following: (1) Robotics is a branch of AI, which is composed of b) Mechanical Engineering a) Electrical Engineering c) Computer Science d) All of the above (2) Name the wheel which is used to rotates around the wheel axle and around the contact. a) Castor wheel b) Standard wheel c) Swedish 45degree d) spherical wheel (3) For a robot unit to be considered a functional industrial robot, typically, how many degrees of freedom would the robot have? a) 4 b) 5 d) 7 c) 6 (4) One of the leading American robotics centers is the Robotics Institute located at? a) CMU b) MIT c) RAND d) SRI (5) Which of the following is not application domains of Computer Vision? b) Biometrics a) Agriculture c) Page control d) Transport (6) Which of the following is not a type of Robot Locomotion? a) Legged b) Wheeled c) Tracked deslip d) Tracked skid (7) Which of the following is not an essential components for construction of robots?

b) Actuators

a) Power Supply

c) Sensors	d) Energy
(8) Decision support programs are designed to help	managers make
a) budget projections	b) visual presentations
c) business decisions	d) vacation schedules
(9) Which of the following terms refers to the use of robot device?	f compressed gasses to drive (power) the
a) pneumatic	b) piezoelectric
c) hydraulic	d) photosensitive
(10) What is true about Robots?	
a) They operate in real physical world	 b) Inputs to robots is analog signal in the form o speech waveform or images
c) They need special hardware with sensors and effectors.	d) All of the above
(11) Which of the following is not application of Rob	potics?
a) Industries	b) Military
c) Medicine	d) Hills
(12) Which of the following terms refers to the rotati	onal motion of a robot arm?
a) swivel	b) axle
c) retrograde	d) roll
(13) PROLOG is an AI programming language which logic known as predicate calculus. It was development Marseilles by a team of specialists. Can you nan	oped in 1972 at the University of
a) Alain Colmerauer	b) Niklaus Wirth
c) Seymour Papert	d) John McCarthy
(14) Which of the basic parts of a robot unit would in programmed to determine what the robot would	<u>*</u>
a) sensor	b) controller
c) arm	d) end effector
(15) Robot is derived from Czech word	
a) Rabota	b) Robota
c) Rebota	d) Ribota
(16) The main objective(s) of Industrial robot is to	
a) To minimize the labour requirement	b) To increase productivity
c) To enhance the life of production machines	d) All of the above
(17) Match the following	
a) a-1, b-4, c-2, d-3	b) a-3, b-4, c-2, d-1
c) a-3, b-2, c-4, d-1	d) a-4, b-3, c-2, d-1
(18) Industrial Robots are generally designed to carry system(s).	y which of the following coordinate
a) Cartesian coordinate systems	b) Polar coordinate systems
c) Cylindrical coordinate system	d) All of the above
(19) The Robot designed with Polar coordinate system	ms has
a) Three linear movements	h) Three rotational movements

c) Two linear and one rotational movement	d) Two rotational and one linear movement
(20) Which of the following work is done by General p	surpose robot?
a) Part picking	b) Welding
c) Spray painting	d) All of the above
(21) nternal state sensors are used for measuring	of the end effector.
a) Position	b) Position & Velocity
c) Velocity & Acceleration	d) Position, Velocity & Acceleration
(22) Which of the following sensors determines the relative environment and the objects handled by it	ationship of the robot and its
a) Internal State sensors	b) External State sensors
c) Both (A) and (B)	d) None of the above
(23) Which of the following is not a programming lang	uage for computer controlled robot?
a) AMU	b) VAL
c) RAIL	d) HELP
(24) In a functional industrial robot unit, typically, how robot have?	many degrees of freedom would the
a) 6	b) 7
c) 8	d) 9
(25) Which of the following having the nearest meaning arm?	gs to the rotational motion of a robot
a) swivel	b) axle
c) retrograde	d) roll
(26) If we are working on LISP, the function returns t it	f is a "cons" cell and nil otherwise
a) (cons)	b) (cous =)
c) (eq)	d) (consp)
(27) Which of the following premises is least likely to it	include operational robots?
a) Car showroom	b) private homes
c) hospitals	d) factory
(28) A team of researchers at the University of Marseill head of this team?	les developed PROLOG. Who was the
a) John McCarthy	b) Niklaus Wirth
c) Seymour Papert	d) Alain Colmerauer
(29) Which of the following refers to the usage of comp	pressed gasses to drive the robot device?
a) photosensitive	b) hydraulic
c) piezoelectric	d) pneumatic
(30) Which of the following statements are most correct systems used to operate robots?	et with regard to the physics of power
a) hydraulics includes the compression of liquids	b) hydraulics includes the compression of air
c) chemical batteries produce AC power	d) pneumatics involve the compression of air
(31) Which of the following is not the advantage of a ro	obotics implementation program?
a) Quality of manufactured things can be better	b) Robots work constantly around the clock
c) Low costs for hardware and software	d) Decreased company cost for worker fringe advantages

(32) In a rule-based system, Which of the following is	the form of the procedural domain?	
a) rule interpreters	b) production rules	
c) meta-rules	d) control rules	
(33) Which of the following is not among the 5 basic parts of a robot?		
a) controller	b) end effectors	
c) peripheral tools	d) drive	
(34) 1. What is the name for information sent from robot sensors to robot controllers?		
a) temperature	b) pressure	
c) feedback	d) signal	
(35) 3. What is the name for space inside which a robot unit operates?		
a) environment	b) spatial base	
c) work envelope	d) exclusion zone	
(36) 4. Which of the following terms IS NOT one of the	e five basic parts of a robot?	
a) peripheral tools	b) end effectors	
c) controller	d) drive	
(37) 6. PROLOG is an AI programming language which solves problems with a form of symbolic logic known as predicate calculus. It was developed in 1972 at the University of Marseilles by a team of specialists. Can you name the person who headed this team?		
a) Alain Colmerauer	b) Niklaus Wirth	
c) Seymour Papert	d) John McCarthy	
(38) 7. The number of moveable joints in the base, the arm, and the end effectors of the robot determines		
a) degrees of freedom	b) payload capacity	
c) operational limits	d) flexibility	
(39) 9. For a robot unit to be considered a functional in degrees of freedom would the robot have?	idustrial robot, typically, how many	
a) three	b) four	
c) six	d) eight	
(40) 10. Which of the basic parts of a robot unit would include the computer circuitry that could be programmed to determine what the robot would do?		
a) sensor	b) controller	
c) arm	d) end effector	
(41) 2. With regard to the physics of power systems us statements are most correct?	ed operate robots, which statement or	
a) hydraulics involves the compression of liquids	b) hydraulics involves the compression of air	
c) pneumatics involve the compression of air	d) chemical batteries produce AC power	
(42) 4. Which of the following statements concerning to correct?	the implementation of robotic systems is	
 a) implementation of robots CAN save existing jobs 	b) implementation of robots CAN create new jobs	
c) robotics could prevent a business from closing	d) all of the mentioned	
(43) 7. In LISP, the function returns t if is a CONS cell and nil otherwise		
a) (cons)	b) (consp)	
c) (eq)	d) (cous =)	

(44) 9. If a robot can alter its own trajectory in response to be	e to external conditions, it is considered
a) intelligent	b) mobile
c) open loop	d) non-servo
(45) 10. One of the leading American robotics centers in	is the Robotics Institute located at?
a) CMU	b) MIT
c) RAND	d) SRI
(46) A program language	,
a) defines the form of the instruction	b) is always machine dependent
c) is never machine dependent	d) None of the above
(47) Which technique enables the designer to mold and using a series of lines?	,
a) Solid modeling	b) Wire-frame modeling
c) Surface modeling	d) None of the above
(48) In a rule-based system, procedural domain knowle	edge is in the form of
a) rule interpreters	b) meta-rules
c) control rules	d) production rules
(49) is correct for proximity sensors?	
a) Inductive type	b) Capacitive type
c) Ultrasonic wave type	d) All of the mentioned
(50) Which of the following are not regular?	
a) (A) and (B) only	b) (B), (C) and (D) only
c) (A), (B) and (C) only	d) (B) and (D) only
(51) is false regarding the evaluation of cor	nputer programming languages?
a) Hardware maintenance cost	b) Software development
c) Efficiency and Readability	d) Application oriented features
(52) The transfers the executable image of a memory.	C++ program from hard disk to main
a) Compiler	b) Debugger
c) Linker	d) Loader
(53) From the point of view of the programmer, what a level language rather than internal machine code of	
a) Program portability	b) Efficiency
c) Easy development	d) None of the above
(54) Portable program is	
a) Program with wheels	b) Independent from its authors
c) Independent of platform	d) None of the above
(55) Object modules generated by assembler that conta resolved for two or more object module by a/an	ins unresolved external references are
a) Operating system	b) Compiler
c) Loader	d) Linker
(56) Which of the following IS NOT one of the advanta implementation program?	ages associated with a robotics

a) Low costs for hardware and software	b) Robots work continuously around the clock
c) Quality of manufactured goods can be improved	d) Reduced company cost for worker fringe benefits
(57) In LISP, the function returns t if is a CONS	S cell and nil otherwise
a) (cons)	b) (consp)
c) (eq)	d) (cous =)
(58) In a rule-based system, procedural domain	knowledge is in the form of
a) production rules	b) rule interpreters
c) meta-rules	d) control rules
(59) The LVDT can be used to measure	
a) Level	b) Acceleration
c) Speed	d) All of these
(60) A Voltmeter should have	
a) Infinite resistance	b) Very high resistance
c) Low resistance	d) Zero resistance