भारतीय सूचना प्रौद्योगिकी अभिकल्पना,
एवं विनिर्माण संस्थान, कांचीपुरम

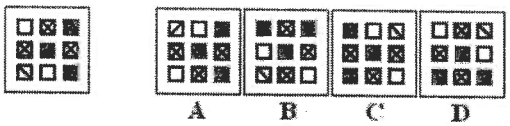
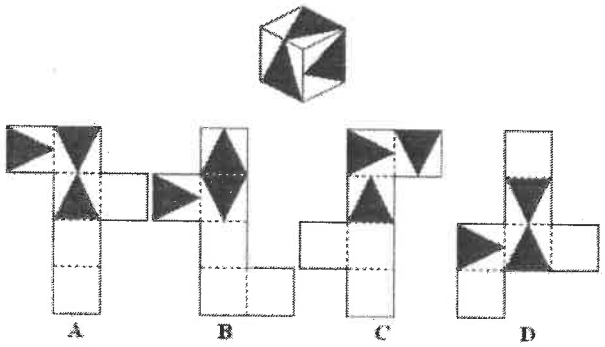
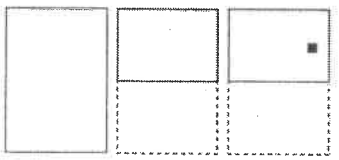
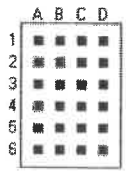
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,
DESIGN AND MANUFACTURING, KANCHEEPURAM

Post: Junior Technician (Design)

Screening Test (Level-1)

Instructions

1. Answer all questions. Duration: 120 minutes
2. Each question below carries one mark.and wrong answers carries negative mark 0f 0.25

S. No.	Questions
1	Which figure is identical to the first? 
2	Which pattern can be folded to make the cube shown? 
3	The drawings show a sheet of paper which has been foldeD. The dashed lines indicate the whole sheet, each drawing represents a single folD. The black square shows where a hole was puncheD. Where do the holes appear when the sheet is unfolded?   A: 2C,5C; B: 2D,5D; C: 3D,3D; D: 2C,2D
4	Which of the following processes is not a formative process?

	A. Bending B. Plastic injection molding C. Selective Laser Sintering D. Forging
5	Choose the correct sequence to generate a prototype. A. 3D CAD data - CAD solid model - STL file - RP prototype B. CAD solid model - 3D CAD data - RP prototype - STL file C. STL file - 3D CAD data - CAD solid model - RP prototype D. 3D CAD data - STL file - CAD solid model - RP prototype
6	Stress is A. External force B. Internal resistive force C. Axial force D. Radial force
7	Poisson's ratio is A. Lateral strain / Longitudinal strain B. Shear strain / Lateral strain C. Longitudinal strain / Lateral strain D. Lateral strain / Volumetric strain
8	An invariant reaction that produces a solid up on cooling two liquids: A. Eutectic B. Peritectic C. Monotectic D. Syntectic
9	How is the material removed in Abrasive water jet machining? A. Vaporization B. Electron transfer C. Corrosion D. Erosion
10	Flank wear occurs mainly on which of the following A. nose part & top face B. cutting edge C. nose part, front relief face,& side relief face D. face of the cutting tool at a short distance from the cutting edge
11	Cutting tool material 18-4-1 HSS has which one of the following compositions? A. 18% W, 4% Cr, 1% V B. 18% Cr, 4% W, 1% V C. 18% W, 4% Ni, 1% V D. 18% Cr, 4% Ni, 1% V

12	Full form of STL is _____. A. Standard Tessellation Language B. Streto Tessellation Lithography C. Stereo Tessellation Lithography D. Straight Tessellation Language
13	Tensile Strain is A. Increase in length / original length B. Decrease in length / original length C. Change in volume / original volume D. All of the above
14	The boundary line between (liquiD. and (liquid+soliD. regions must be part of _____. A. Solvus B. Solidus C. Liquidus D. Tie-line
15	Surface roughness depends on which of the following parameters in Abrasive water jet machining? A. Work piece material B. Grit size C. Abrasive type D. All of the mentioned
16	The angle of inclination of the rake face with respect to the tool base measured in a plane perpendicular to the base and parallel to the width of the tool is called____ A. back rake angle B. side rake angle C. side cutting edge angle D. end cutting edge angle
17	Which one is the Low Level Language: A. Assembly B. Java C. C++ D. None of The Above
18	What do you call a single point on a computer screen: A. Cell B. Element C. Pixel D. None of The Above

19	In how many directions, can the cutting takes place in Water jet machining? A. Uni-directional B. Bi-directional C. Multi-directional D. None
20	A brittle material has A. No elastic zone B. No plastic zone C. Large plastic zone D. None of these
21	In a single-component condensed system, if degree of freedom is zero, maximum number of phases that can co-exist _____. A. 0 B. 1 C. 2 D. 3
22	Following is wrong about a phase diagram. A. It gives information on transformation rates. B. Relative amount of different phases can be found under given equilibrium conditions. C. It indicates the temperature at which different phases start to melt. D. Solid solubility limits are depicted by it.
23	From the following, the alternative name for Rapid Prototyping is _____. A. Additive Manufacturing B. Layer Manufacturing C. Direct CAD Manufacturing D. All of the mentioned
24	Which of the following relations depict relation between Celsius and Fahrenheit scale? A. (°C / 5) = (°F – 32) / 9 B. (°C / 9) = (°F – 32) / 5 C. (°C / 32) = (°F – 9) / 5 D. None of the above
25	On a drilling machine, which process is known as reaming? A. Enlargement of existing hole B. Hole made by removal of metal along the hole circumference C. Smoothly finishing and accurately sizing a drilled hole D. All of the above

26	Which of the following is a ferrous alloy? A. Brass B. Aluminum alloys C. Cast steel D. All of the above
27	Copper when alloyed with zinc is known as A. Brass B. Bronze C. Babbits D. All of the above
28	The plastic materials which do not undergo chemical change when heated are ____ A. Thermoplasts B. Thermosets C. Both A. and B. D. None of the above
29	Which body transmits force with negligible deformation? A. Elastic body B. Rigid body C. Deforming body D. All of the above
30	Casting replica used to make the cavity is called as A. Mould B. Pattern C. Cope D. None of the above
31	Which of the following operations is/are performed on a lathe machine? A. Spot-facing B. Parting C. Reaming D. All of the above
32	A flat surface can be produced by a lathe machine, if the cutting tool moves _____ A. parallel to the axis of rotation of workpiece B. perpendicular to the axis of rotation of workpiece

	C. at an angle of 45^0 D. none of the above
33	What is the function of cone pulley drive in lathe machines? A. Drive the lead screw B. Change the spindle speed C. Drive the tail-stock D.. All of the above
34	Which of the following statements is/are true for gear drives? A. They can be used for long centre distances B. They are used to transmit power between non-intersecting and parallel shafts C. They cannot be used for high reduction ratios D.. All of the above
35	Which gears are used to connect two intersecting shaft axes? A. Crossed helical gear B. Worm and worm wheel C. Bevel gears D. All of the above
36	In stress-strain diagram, up to proportional limit _____ A. stress is inversely proportional to strain B. force is directly proportional to displacement C. stress is directly proportional to strain D. strain is directly proportional to stress
37	In a tensile testing condition, deformation per unit length is called as _____ A. strain B. stress C. modulus of elasticity D. none of the above
38	Factor of safety is the ratio of _____ A. working stress and ultimate strength B. yield strength and endurance strength C. ultimate strength and yield strength D. yield strength and working stress

39	ISO 14000 quality standard is related with A. Environmental management systems B. Automotive quality standards C. Eliminating poor quality D. Customer satisfaction
40	Which of the following statements is true for LVDT? A. It is a mutual capacitive transducer B. Presence of hysteresis gives high repeatability C. It can measure displacement and pressure D. All of the above
41	Which of the following is an example of constant mass manufacturing process? A. Rolling B. Turning C. Broaching D. Sawing
42	A model of casting, constructed to use for forming a mould in damp sand, is called as A. sand construction B. pattern C. cover D. none of the above
43	The process of joining two pieces of metal with a different fusible metal applied in a molten state is called as A. welding B. soldering C. both A. and B. D. none of the above

44	Calculate time taken to face a workpiece of 100 mm diameter. The cross feed is 0.2 mm/rev and spindle speed is 200 r.p.m. A. 10 min B. 5 min C. 2.5 min D. 1.25 min
45	What is used as joining medium in brazing operation? A. Copper-zinc alloy B. Nickel-silver alloy C. Lead-tin alloy D. All of the above
46	Chances of crack propagation are more in A. cold working process B. hot working process C. both A. and B. D. none of the above
47	Support structures are required for _____. A. overhanging portions B. thin portions C. thick portions D. all of the mentioned
48	Eutectic product in Fe-C system is called A. Pearlite B. Bainite C. Ledeburite D. Spheroidite

49	A perfectly elastic body A. Can move freely B. Has perfectly smooth surface C. Is not deformed by any external surface D. Recovers its original size and shape when the deforming force is removeD.
50	Which of the following is a dimensionless quantity? A. Shear stress B. Poison's ratio C. Strain D. Both B. and C.
51	When a wire is stretched to double in length, the longitudinal strain produced in it is A. 0.5 B. 1.0 C. 1.5 D. 2.0
	Directions— (Q. 52-55) Below is given a passage followed by several possible inferences which can be drawn from the facts stated in the passage. You have to examine each inference separately in the context of the passage and decide upon its degree of truth of falsity. Now, mark your answer as— (A) if the inference is 'definitely true' i.e., it properly follows from the statement of facts given. (B) if the inference is 'probably true' though not 'definitely true' in the light of the facts given. (C) if the 'data are inadequate', i.e., from the facts given you cannot say whether the inference is likely to be true or false. (D) if the inference is 'probably false', though not 'definitely false' in the light of the facts given. (E) if the inference is 'definitely false', i.e., it cannot possibly be drawn from the facts given or it contradicts the given facts. The main benefit to the economy from an active stock market is the ready availability of risk capital for investment in equities through the primary market. For that risk capital be readily available. Investors need to have an easy exit route. A liquid secondary market provides an easy exit route through the active involvement of buyers and sellers. It does not matter whether these buyers and sellers have short or long term investment horizons. Liquidity in the market is enhanced by leveraged players who either borrow to play the market or achieve a similar result through futures contracts whose economic value includes financing costs. Short sellers confer a similar benefit by borrowing stock or achieving the same result through futures contracts.

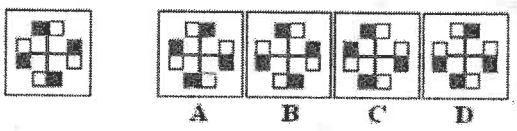
52	Nature of activity of the long-term players in the secondary market has significant effect on the health of stock market.
53	Players in the primary market generally borrow funds and earn money by quick disposal in the secondary market.
54	Active secondary market provides liquidity to the transactions in primary market.
55	Passive stock market enhances availability of capital.
56	.Why sustainable manufacturing is required? A. proper maintenance B. reuse C. Conserving resources D. all of the mentioned
57	Direction— (Q. 1-5) In each of the following given questions there is a question followed by two statements I and II are given. You have to find out that the information given in the statements is sufficient to answer or not. Read both the statements. Give Answer— (A) If only statement I is sufficient to answer the question. (B) If only Statement II is sufficient to answer the question. (C) If either I or II alone is sufficient to answer the question. (D) If both the Statements I and II are sufficient to answer the question. (E) If both the Statements I and II are not sufficient to answer the question.
58	What is the meaning of 'come' in a coded language ? Statement - I. The meaning of 'pit na ja' is 'come and go' in that coded language. Statement - II. The meaning of 'na dik sa' is 'you may go' in that coded language.
59	Who is the tallest amongst M, T, R, K and Q? Statement - I. T is taller than R, M and Q but shorter than K. Statement – II. R is shorter than T and M but taller than Q.
60	In which direction is D from P? Statement - I. S is in the South from P which is in the West of D. Statement - II. P and R is in a straight line and R is in the South from D.
61	In which month of the year Mohan was born? Statement - I. Mohan was born in the winter. Statement - II. Mohan was born exactly after 14 months of his sister, birth and she was born in the month of October.
62	Gibbs phase rule for general system:

	A. P+F=C-1 B. P+F=C+1 C. P+F=C-2 D. P+F=C+2
63	Which of the following operation is used to make a ball bearing? A. Upsetting B. Press forging C. Roll forging D. Skew rolling
64	End of the work piece can be supported by using A. Headstock B. Tailstock C. Tool Post D. None of the mentioned
65	Maximum deviation in size of shaft or hole is known as A. Tolerance B. Fundamental deviation C. Clearance D. Interference
66	Which of the following process involves metallurgical fusion? A. Forming B. Welding C. Forging D. Extrusion
67	Solidification of casting does not depend upon which factor? A. Type of metal B. Thermal properties of metal C. Geometric relationship between volume and surface area D. Surface tension
68	When the molten metal leaks out of mould which defect occurs? A. Run out B. Misrun C. Fusion D. Drop
69	In a shaper machine, time of return stroke is _____ the time of forward stroke in crank and slotted link mechanism. A. Less than B. More than

	C. Equal to D. None of the mentioned
70	9. Which of the following carries clamping bolt T-slots for fixing work piece? A. Base B. Column C. Knee D. Table
71	Typical coolants used for machining of aluminum 1. Kerosene 2. Soda water 3. Air 4. Paraffin oil A. 1, 2, 3, and 4 B. 2 and 3 only C. 1 and 2 only D. 3 and 4 only
72	When a wire is stretched to double in length, the longitudinal strain produced in it is A. 0.5 B. 1.0 C. 1.5 D. 2.0
73	Thickness of tooth measured along the pitch circle is known as A. Tooth thickness B. Backlash C. Face width D. Top land
74	During the execution of a CNC part program block NO20 GO2 X45.0 Y25.0 R5.0 the type of tool motion will be A. circular Interpolation – counterclockwise B. circular Interpolation – clockwise C. linear Interpolation D. rapid feed
75	. Hydraulic drives are used for a robot when A. high torque is required B. high power is required C. rapid motion of robot arm D. all of the mentioned

76	Following is the data available on cutting speed and tool life V = 150 m/min, T= 60 min V = 200m/min, T= 23 min. Determine the Taylors constant and tool life exponent. A. n = 0.5, C= 100 B. n = 0.5, C= 400 C. n = 0.3, C= 400 D. n = 0.3, C= 512
77	Operation of finishing previously drilled hole in order to bring it to accurate size and have good surface finish is known as A. Drilling B. Reaming C. Boring D. Counter boring
78	Which of the following milling operation can be used for machining a flat surface, parallel to the axis of cutter? A. Slab milling B. Face milling C. Angular milling D. Form milling
79	Which of the following property can be enhanced by reinforcing with ceramics in aluminum alloy? A. Density B. Torsion resistance C. Wear resistance D. Strength
80	Which of the following is not correct about fixture? A. It is used to hold the work B. It is used to position the work the work C. It assures high accuracy of parts D. It is used to guide the cutting tool
81	In which of the following operation jigs are preferred over fixture? A. Drilling B. Turning C. Milling D. Grinding
82	In which process the cross section of the metal is reduced by forcing it to flow through a die under high pressure? A. Forging B. Forming C. Extrusion D. Welding

83	The process of removing unwanted material from the casting is called? A. finishing B. cleaning C. fettling D. blowing
84	Choose the correct antonym of the given word ***Homogeneous*** A. Parsimonious B. Consciousness C. Variegated D. Loquacious
85	To prevent heavier and lighter impurities, which of the following system is used? A. Skim bob B. Pouring basin C. Strainer D. Splash core
86	Choose the correct antonym of the given word *Candid* A. Shallow B. Secretive C. Vague D. Anxious
87	5 kg of metal A and 20 kg of metal B are mixed to form an alloy. The percentage of metal A in the alloy is A. 10% B. 20% C. 30% D. 40%
88	If the price of a book is first decreased by 25% and then increased by 20%, then the net change in the price will be A. 5% increase B. 5% decrease C. 10% decrease D. 10% increase

89	8 men can complete a piece of work in 20 days. 8 women can complete the same work in 32 days. In how many days will 5 men and 8 women together complete the same work? A. 10 days B. 16 days C. 18 days D. 20 days
90	ASTM stands for _____ A. American Society for Tensile Measurement B. American Society for Testing and Materials C. American Society for Tool Measurement D. American Society for Tensile Material
91	Brinell Hardness Number (BHN) for soft iron is between _____ A. 1000-2000 B. 227-857 C. 67-500 D. 0-10
92	The melting point of iron (in oC) is? A. 768 B. 1535 C. 1410 D. 910
93	The average age of seven boys sitting in a row facing North is 26 years. If the average age of the first three boys is 19 years and the average age of the last three boys is 32 years, what is the age of the boy who is sitting in the middle of the row? A. 24 years B. 28 years C. 29 years D. 31 years
94	Which figure is identical to the first?  A B C D
95	The fire .....the huts before the fire brigade came.

	A. had burnt B. will burn C. has burnt D. burns
96	What is the synonym for the word *upright* A. honorable B. horizontal C. humble D. supine
97	In a computer Operating System, what is the full name of FAT? A. File attribute table B. File allocation table C. Font attribute table D. Format allocation table
98	Which of the following is not application software? A. Windows 7 B. WordPad C. Photoshop D. MS-excel
99	Who is known as the father of Computer Science : A. Charles Babbage B. Herman Hollerith C. James Gosling D. None of The Above
100	Resistance developed by the surface of any material is known as _____ A. Strength B. Hardness C. Stiffness D. Creep