

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-4/T-2 B. Sc. Engineering Examinations 2013-2014

Sub : **IPE 427** (Marketing Management)

Full Marks : 210

Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

SECTION – AThere are **FOUR** questions in this Section. Answer any **THREE**.

1. (a) Describe how customers buying behavior is influenced by perception. (15)
 (b) Discuss different supplier search techniques with appropriate examples. (14)
 (c) Differentiate between institutional and government market. (6)
2. (a) How can marketers overcome price pressure in a business market? Discuss. (15)
 (b) Discuss how market leaders can defend their market shares. (20)
3. (a) Discuss different bases for segmenting consumer market. (20)
 (b) Describe the technique for evaluating and selecting market segments. (15)
4. (a) Discuss the criteria for choosing brand elements with appropriate examples. (12)
 (b) Describe Porter's five forces model. (10)
 (c) Describe different niche roles that marketers can play with necessary examples. (13)

SECTION – BThere are **FOUR** questions in this Section. Answer any **THREE**.

5. (a) Describe market intelligence gathering system with examples. (20)
 (b) Discuss the evolution of marketing ideas from which companies choose their orientation. (15)
6. (a) Explain how consumer goods can be classified. (6)
 (b) Discuss product mix pricing. (12)
 (c) Explain how design can play a very important role in differentiating products. Define down-market and up-market stretches. (10+7)
7. (a) Briefly describe the relationship between consumer psychology and pricing. (10)
 (b) Describe different price selecting objectives and how companies select a pricing objective. (20)

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- (c) Define markup and target return pricing. (5)
8. (a) Explain perceived value pricing and how it can play an important role in product differentiation. (10)
- (b) Explain the ways in which marketing channel alternatives differ. (10)
- (c) Briefly describe the economic criteria of evaluating major marketing channel alternatives. Briefly explain any three mechanisms to manage conflict between marketing channels. (10+5)
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SECTION – A

There are **FOUR** questions in this section. Answer any **THREE**.

Assume reasonable values for any missing data.

1. (a) What do you understand by referencing and repeatability? Briefly explain the mechanics of locating. (13)
- (b) Differentiate locators from clamps. Discuss three general forms of locators with necessary sketches. (13)
- (c) With six-point locational method, six individual locators reference and restrict the workpiece – Explain with sketches. (20 $\frac{2}{3}$)

2. (a) What is the basic function of guideways? Briefly discuss different requirements of guideways that must be satisfied for machine tools. (13)
- (b) What are the common shapes of slideways used in machine tools? Explain briefly with suitable sketches. Also mention their relative advantages and disadvantages. (13)
- (c) Optimum clearance between sliding surfaces in machine tools is very important. – Do you agree? Explain why. Discuss different techniques used for periodic adjustment of clearance in the slideways. (20 $\frac{2}{3}$)

3. (a) Classify drives used in machine tools. Briefly explain the principles of operation of a translatory hydraulic drive. List the common type of pumps used in hydraulic drives? Explain each of them in short. (20)
- (b) Why should we select optimum speed and feed rates in case of machining operations? Differentiate stepped speed regulation from stepless speed regulation. Briefly explain different mechanical ways of stepless speed regulation with necessary sketches. (26 $\frac{2}{3}$)

4. (a) What are the common laws of speed regulation? Give simple examples for each of them with number of speed steps, $z = 6$, cutting speed, $v = 20$ m/min, minimum rpm $n_1 = 30$. (20)
- (b) What are the limiting transmission ratios for speed box and feed box designed with geometric progression. For a feed box, feed ranges = 0.1 - 1.11 mm/rev, number of stages = 2 stages and progression ratio = 1.14. (26 $\frac{2}{3}$)
 - Determine feed range
 - Determine number of feed steps
 - Write structural formulae
 - Draw the structural diagrams and select the best one
 - Determine the rpm values of the output shaft and
 - Draw the feed chart

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SECTION – B

There are **FOUR** questions in this section. Answer any **THREE**.

5. (a) Discuss the necessity of change gear box and reversing mechanism in lathe machine. Also explain related mechanism involved with necessary sketch(es). (13)
- (b) What are the standard accessories of lathe machine? Explain them with necessary sketches. (20 $\frac{2}{3}$)
- (c) In which method of taper turning do you need to disengage the feed screw of cross-slide? Explain the method with necessary sketch. (13)
6. (a) In which case do you need to go for differential indexing? How do you calculate the values of differential change gears for left-hand worm in dividing head? (16 $\frac{2}{3}$)
- (b) Why do you need to use adjustable sector in dividing head? Explain. (10)
- (c) What are the advantages of turret lathe over engine lathe? Discuss different classification of turret lathe. (10)
- (d) What do you understand by 'Strain Back' effect? (10)
7. (a) Why do you need to have aperture in between the slide ways? Does this aperture affect machining surface finish? If so, discuss remedies. (16 $\frac{2}{3}$)
- (b) Discuss the necessity of separator in ball bearing. (10)
- (c) What are the motions involved in gear shaper for cutting helical gears? Explain briefly. (10)
- (d) In which case does the profile of gear cutter of gear shaper same as the profile of the gear produced? (10)
8. (a) Discuss cutting setting mechanism in gear hobber for cutting spur and helical gears. (10)
- (b) How do you perform acceptance test? Explain a procedure to perform accuracy test for a gear shaper. (13)
- (c) What are the requirements of machine tool structure? Do you think that cast iron is better structural material compared to steel? Explain reasons. (13 $\frac{2}{3}$)
- (d) Does location of bearing affect the machining accuracy? What should be the appropriate location of bearing in lathe spindle? (10)
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SECTION – AThere are **FOUR** questions in this section. Answer any **THREE**.

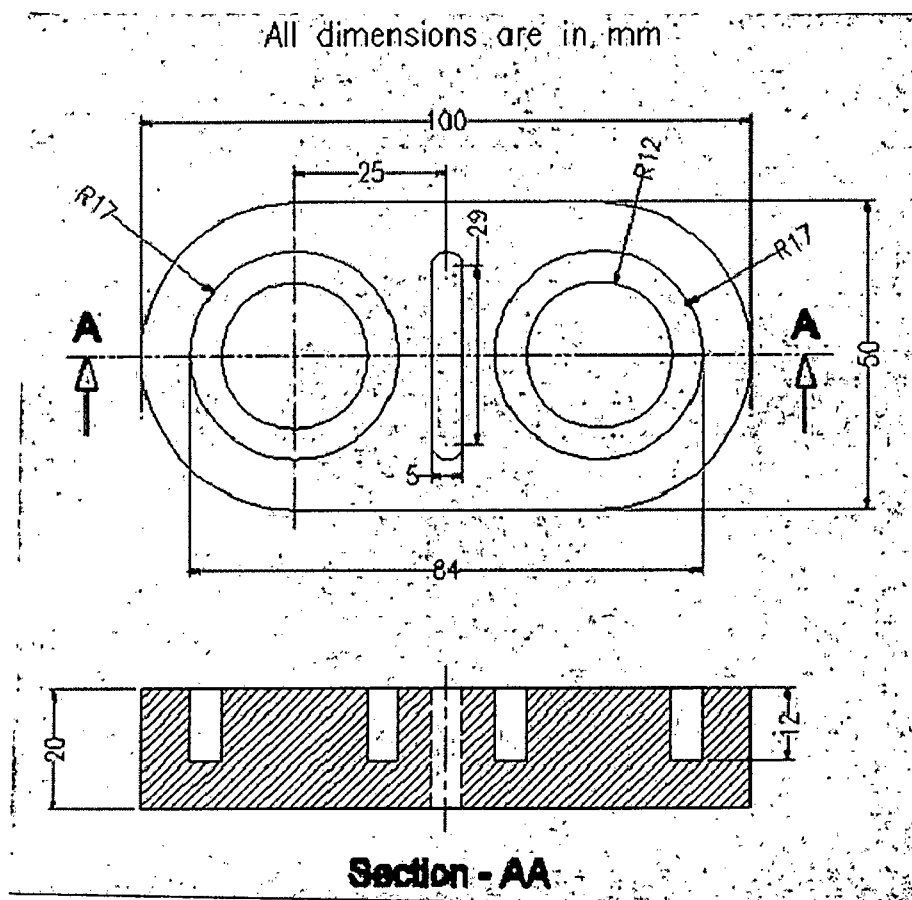
1. (a) What do you understand by models of design process? Discuss how the design is progressively refined during the design process from abstract to completely defined for manufactured. (10)
(b) List names of few geometric entities available in CAD systems. Also explain different ways for defining these entities in CAD system with necessary sketches. (10)
(c) Classify different type of surfaces based on generating techniques in CAD systems with necessary sketches. Briefly discuss skinned and lofted surfaces with sketched. (10+5)
2. (a) Compare CSG and B-rep solid modeling techniques. What are the results of applying the Boolean intersection, union and difference operations to the two primitives shown in Fig. for Q. No. 2(a). (12)
(b) Provide examples of explicit equation of a straight line and implicit equations of a straight line and a conic section curve. Are these equations suitable for CAD system? Explain why. (10)
(c) Why is cubic polynomial very popular for three dimensional modeling? Draw the basis/blending functions for Hermit and Bezier cubic curves. (13)
3. (a) Explain the rules used for examining topological consistency of a solid model with necessary sketches. Show that 3D model shown in Fig. for Q. NO. 3(a) is topologically consistent. (15)
(b) A circle of radius 25.0mm, centered at $X = 100.0$, $Y = 150.0$ is to be drawn as a series of lines by a two dimensional drafting system. If maximum display tolerance is 2.0mm, calculate the number of lines required to display the circle within this tolerance, and calculate the screen coordinates of at least one line. Here the window bounds are (40.0, 100.0) and (160.0, 200.0), and viewpoint bounds are at pixel locations (0, 50), (480, 450). (20)
4. (a) What are the facilities that are typically provided for manipulation of the model in CAD systems? Briefly explain. (13)
(b) What are the requirements for a data structure of CAD systems to support interactive modeling? Give an example of how CAD systems store the model on which model creation and manipulation algorithm act. (10+12)

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SECTION – B

There are **FOUR** questions in this section. Answer any **THREE**.

5. (a) How can you distinguish Direct numerical control from Distributive numerical control? (6)
- (b) Elaborate four different types of CNC input and storage media. (10)
- (c) With appropriate examples, show three different types of tool positioning modes. (12)
- (d) During the execution of a circular interpolation command, do you think tool moves along a circular path? Explain your logic. (7)
6. (a) Mention the benefits of Ball leadscrew over Acme leadscrew. Which one is currently being used for CNC machines and why? (8)
- (b) Phase-change fixtures are now very popular in CNC machining – why? Discuss three different types of phase-change fixtures. (12)
- (c) Write a G-code for machining the following part. (15)



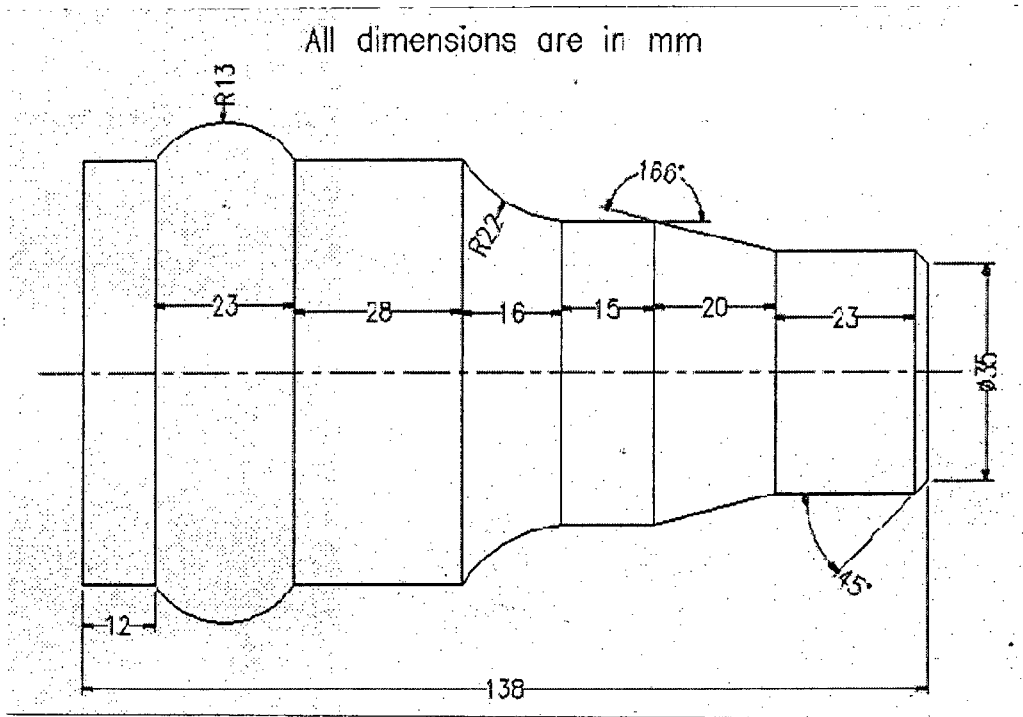
7. (a) Tool length offset is required for CNC machining center but not for CNC machine – why? Describe the offset technique in details. (8)
- (b) Briefly explain the working principle of chain type ATC. (8)

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Contd ... Q. No. 7

(c) In CNC machining center, cutting tool is not directly inserted into the machine spindle head – rather tool is inserted into tool holder which is inserted into the spindle head. Elaborate the securing technique of tool holder into spindle head. (7)

(d) Write a G-code for turning the following component (profile only). (12)



8. (a) Outline the five sections of an IGES file for data transfer, and show as an example the representation of an arc within such a file. (10+8)

(b) "The neutral file solution is easier said than done" – do you agree? Explain. (8)

(c) List five different standards used for data exchange. Briefly discuss four main sections of a DXF file format. (9)

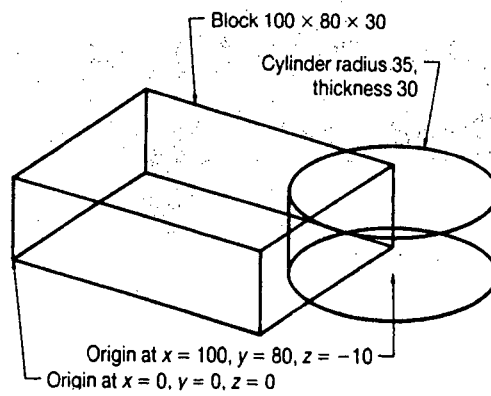


Fig for Q.No. 2(c)

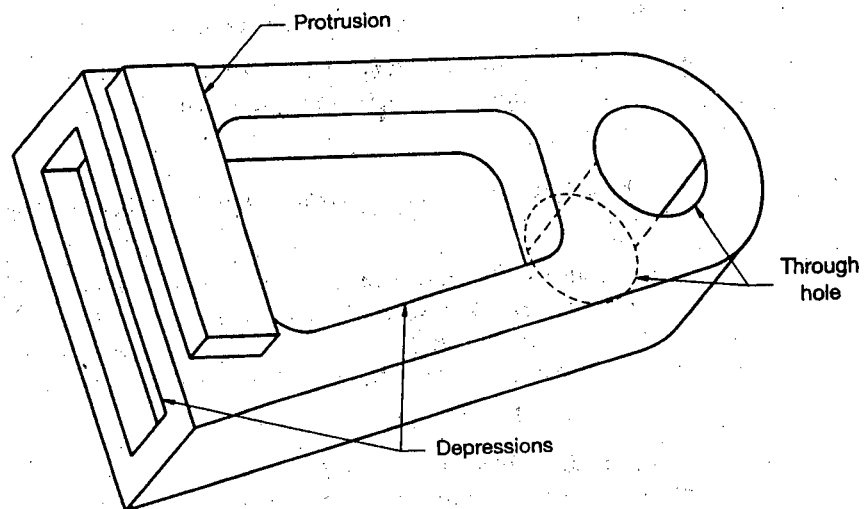


Fig for Q.No. 3(a)

List of G-code for CNC Milling/Turning Operations

G-code	Description
G00	Rapid traverse
G01	Linear interpolation
G02	Clockwise circular interpolation
G03	Counterclockwise circular interpolation
G20	Inch data input
G21	Metric data input
G28	Automatic return to the reference point

G-code	Description
G40	Tool (nose) radius compensation cancel
G41	Tool (nose) radius compensation left
G42	Tool (nose) radius compensation right
G54-59	Workpiece coordinate system 1-6 selection
G90	Absolute command programming
G91	Incremental command programming
G92	Zero offset setting

G-code	Description
G50	Maximum spindle speed command
G80	End of shape designation
G81	Start of longitudinal shape designation
G82	Start of traverse shape designation

G-code	Description
G85	Call for rough bar turning cycle
G87	Call for finishing turning cycle
G96	Constant cutting speed
G97	Fixed RPM

List of M-code for CNC Milling/Turning Operations

M-code	Description
M02	End of program
M03	Spindle clockwise
M04	Spindle counterclockwise
M05	Spindle stop

M-code	Description
M06	Tool change
M08	Coolant on (spray)
M09	Coolant off
M30	End of program

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USE SEPARATE SCRIPTS FOR EACH SECTION

SECTION – AThere are **FOUR** questions in this section. Answer any **THREE**.

1. (a) How can you distinguish Strong culture from Weak culture in an organization?
Mention few benefits of Strong culture. (12)
- (b) Provide example for Policy, Procedure and Rule in programmed decision making for a hospital. (10)
- (c) What are the barriers to effective interpersonal communication? Discuss each with appropriate example. (13)
2. (a) What are the contingency factors that affect the structural decision making? Explain. (15)
- (b) Briefly discuss McGregor's theory X and theory Y for motivating employees in a local garment factory. (10)
- (c) Elaborate five stages in group development process with neat sketches. (10)
3. (a) External environment can significantly affect the organizational culture for both specific and general cases – discuss. (12)
- (b) What do you understand by bounded rationality? How can you distinguish "satisfaction" from "satisfice" in bounded rationality? (8)
- (c) Mention few benefits of Goal Setting theory over traditional motivational theories. (7)
- (d) What are the primary characteristics in Job characteristic model? Discuss. (8)
4. (a) Differentiate Mechanistic model from Organic model in organizational design. (10)
- (b) What is group cohesiveness? Comparing with alignment of organizational goals, show different performance levels of employees in an organization. (12)
- (c) What are the benefits of Virtual team over traditional team structure? (7)
- (d) Mention different Non-verbal communication techniques for effective communication. (6)

Contd P/2

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SECTION – B

There are **FOUR** questions in this section. Answer any **THREE**.

5. (a) What do you understand by "a company's macroenvironment", in relation with strategic management? (15)
- (b) What are the "complementary strategic options"? Explain in brief. (20)
6. (a) What is meant by "Local content requirements", in relation with International Business? (15)
- (b) What do you understand by "Dual Responsibility" of HRM? Explain in brief. (20)
7. (a) What do you understand by "Over Specialization" in job design or Redesign? What are the possible solutions? (15)
- (b) Octagon Systems Ltd. manufactures machine shafts. They follow $66\frac{2}{3}\%$ Halsey incentive plan for time saved. Standard time given to complete the job is 27 hours, when a worker actually took 20 hours to complete the job. Wage rate is \$ 3.00 per hour. (20)
- What is the total payment for this worker?
8. (a) Analyze the leadership style in an apparel company in Bangladesh with respect to Managerial Grid. (15)
- (b) Task Structure and positional Power have impact on leadership. What theory is that and how do they affect leadership? (20)
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