



Subject: Contracts and Accounts

Subject Code: 17603

Important Instructions to examiners:

- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling errors should not be given more importance. (Not applicable for subject English and Communication Skills.)
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by the candidate and those in the model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and the model answer.
- 6) In case of some questions credit may be given by judgment on part of examiner of relevant answer based on candidate's understanding.
- 7) For programming language papers, credit may be given to any other program based on equivalent concept.

Model Answer

Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.1	(A)	Attempt any <u>THREE</u>:		12
	(a)	State any four functions of super-intending engineer of PWD. Ans. <u>Functions of Superintending Engineer</u>: i) Administrative approval to the work under his control ii) He should give technical sanction to estimates within his power. iii) Inspect works in his circle. iv) Exercises financial control over execution of original and repair works. v) Arrange procurement of stores. vi) Inspects divisions in his circle and report to C.E.	1 mark each (any four)	4
	(b)	Define 'contract', list of four types of contract. Ans. <u>Definition</u>: Contract is an undertaking by person or firm to do work under certain terms and conditions. <u>Types of contract</u>: i) Lump sum contract. ii) Item rate contract. iii) Percentage rate contract. a) Cost plus percentage rate contract. b) Cost plus fixed fee contract. c) Cost plus variable fee contract. d) Cost plus variable percentage. iv) Labour contract. v) Demolition contract.	1 3 marks (any four)	4



Que. No.	Sub. Que.	Model Answers		Total Marks
		vi) Fee contract. vii) Target contract. viii) Negotiated contract. ix) Material supply contract.		
	c)	Write eight points to be included while drafting a tender notice. Ans. <u>Following points should be included while drafting a tender notice:</u> i) Name of the authority inviting tender ii) Name of work and its location iii) Estimated cost iv) Time limit of completion v) Earnest money required along with tender vi) The availability of data and forms vii) The last date, place and time of receipt of tender viii) The right to reject the tender.	1/2 mark each	4
	d)	Describe any four requirements of a valid contract. Ans. <u>Following are the requirements of valid contract:</u> 1. Contract should be in writing and should be signed by both the parties i.e. owner and contractor. 2. The subject matter of agreement must be legal and definite. 3. If situation arises the contract can be enforced in court of law. 4. Parties should be competent enough to carry out work. 5. Both parties must give their free consent to do work. 6. Contract should be attested by responsible officer.	1 mark each (any four)	4
	e)	Give the meaning of: (i) Earnest money deposit (ii) Security money deposit Ans.i) <u>Earnest money deposit:</u> While submitting tender contractor has to deposit certain amount about 1 to 2% of estimated cost with department. This amount is termed as earnest money deposit. It ensures guarantee of the tender, so that contractor may not refuse to accept work or run away when his tender is accepted. ii) <u>Security deposit:</u> After acceptance of tender, contractor has to deposit a certain amount with the department or owner is called as security deposit, it varies from 5 to 10% of total estimated cost of work.	2 marks	4
Q 1)	B) a)	Attempt any <u>ONE</u>: State different methods executing a work by PWD and explain any one in details. Ans.<u>The following are the various methods for executing a work by P.W.D.:</u> i. Rate list method ii. Piece work method iii. Day's work method iv. Employing labour on daily wages	2 marks	6



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.1		<p><u>i. Rate list method:</u></p> <ol style="list-style-type: none">1. This method is suitable for petty work when the cost is small. Hence various contracting firms are not interested in carrying out work and advertisement in newspaper is not justified for work of small magnitude.2. For such petty work list of petty workers are kept in the office of executive engineer.3. Cost of any individual work to be executed does not exceed Rs.3000/-4. The petty workers will quote rate and lowest offer is accepted. <p style="text-align: center;">OR</p> <p><u>ii. Piece work method:</u></p> <ol style="list-style-type: none">1. This method is suitable for maintenance and repair work.2. Piece work is the agreement which involves the payment for work done at agreed rate without reference to total quantity of work to be done or time of completion.3. Agreement contains only description of item to be executed.4. Form shall be invited from piece worker. The agreement is made on A1 form for percentage basis and A2 form for item rate basis.5. The piece worker has to arrange all material and labour required for carrying out work. <p style="text-align: center;">OR</p> <p><u>iii. Day's work method:</u></p> <ol style="list-style-type: none">1. There are certain works of special nature which cannot be measured hence their valuation is made on basis of actual material and labour used. For e.g. decorative plaster work2. In such cases day work method is adopted for valuation of above items on basis of actual material used and number and class of labour employed and tools and plants required for work.3. In this method contractor has to maintain day to day account of material consumed, the labour, types of labour, the hours for which each labour is employed is filled in day work sheet.4. Contractor is paid on the basis of net cost of various material required and wages paid to the labour plus 20- 25 % as his profit. <p style="text-align: center;">OR</p> <p><u>iv. Employing labour on daily wages:</u></p> <ol style="list-style-type: none">1. In this method department purchase material directly from supplier and engage labour on daily wages on muster as and when required.2. The material is supplied by department or can be purchased directly from market.3. The attendance of total number of labour employed is maintained in muster roll form No.21 by junior engineer and it is checked by assistant engineer. The payment is made weekly, fortnightly or monthly as per requirement.4. When muster roll is closed for payment it is necessary to measure the work during that period and enter it in measurement book. <p><i>(Note: Any one method explained should be given full marks)</i></p>	4 marks each (any one)	6



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks																
Q.1	b)	<p>Write six precautions to be taken while making entries in measurement book. Draw format of a measurement book.</p> <p>Ans. <u>Following precautions to be taken while making entries in measurement book:</u></p> <ul style="list-style-type: none"> i) Entries are made by J.E. and certified by S.D.O or A.E ii) All entries are recorded in ink directly in M.B. iii) No entry is allowed to be erased. iv) If any correction is required, it must be initialed by the officer who made the measurement. v) Measurements are taken in the presence of contractor, and his signature is taken in M.B. vi) Entries should be recorded continuously and no blank pages left or turn off. Any pages left blank should be cancelled by diagonal lines and signed by authority. vii) The M.B. contains name of work, name of contractor, date of measurement, location, date of work order, and number of measurements. <p><u>Measurement Book: (Form No. 23)</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Particulars</th> <th colspan="4">Detail of actual measurement</th> <th rowspan="2">Contents or area</th> </tr> <tr> <th>No.</th> <th>L</th> <th>B</th> <th>D</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Particulars	Detail of actual measurement				Contents or area	No.	L	B	D							<p>1/2 mark each (Any six)</p> <p>3 marks</p>	<p>6</p>
Particulars	Detail of actual measurement				Contents or area															
	No.	L	B	D																
Q.2	a)	<p>Attempt any <u>FOUR</u>:</p> <p>a) State the salient feature of BOT project. Give two examples.</p> <p>Ans.</p> <p><u>Features of BOT project:</u></p> <ul style="list-style-type: none"> i. BOT project means build, operate and transfer project. It is defined as a type of agreement in which private sector builds infrastructure project, operates it and transfers ownership of project to government. ii. Fast development of infrastructure is possible. iii. On completion of project, the expenditure incurred will be collected by toll and this amount is used for maintenance of project. iv. Quality of work is good since public, private partnership is there for construction of project. <p><u>Examples:</u></p> <ul style="list-style-type: none"> i) Mumbai – Pune express highway ii) Baroda – Ahmadabad highway (NH8). iii) Nagpur Express highway (NH50) 	<p>2 marks</p> <p>2 marks (any two)</p>	<p>16</p> <p>4</p>																



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.2	(b)	<p>What is measurement book? State its importance.</p> <p>Ans.</p> <p>Measurement Book (M.B.): It is the book in which measurement of all works and supplies are recorded in the measurement book form no.23, and payment of all works is made on the basis of measurement recorded.</p> <p>Importance:</p> <ol style="list-style-type: none">It is very important account record.All the payment of all works is done based on entries done in measurement record.	2 marks	4
	(c)	<p>Explain briefly administrative approval and technical sanction in connection with government works.</p> <p>Ans.</p> <ol style="list-style-type: none">Administrative approval: For any work, it is necessary to take formal acceptance with respect to cost and work is called as administrative approval. For this the department sends a proposal to government for taking up the work. After considering all aspects like feasibility of project, financial aspect, government accepts proposal.Technical sanction: Technical sanction means the sanction of the detailed estimate, design, rates and cost of work. It is sanctioned by competent authority. The work is taken for the execution only after the technical sanction.	2 marks	4
	(d)	<p>State the use of i) Cash book ii) NMR iii) Indent iv) Imprest cash</p> <p>Ans. The uses of</p> <ol style="list-style-type: none">Cash book: All the transactions relating to the actual receipt and payment of cash are recorded in the cash book.NMR (Nominal Muster Roll): It is necessary to keep the record of attendance of labour.Indent: Procurement of material from store.Imprest Cash: In P.W.D individual officer are given a permanent advance of Rs. 1000/- for the petty expenses to make a payment in connection with government work. From this amount they can pay transport charges, miscellaneous payment of materials and accounting of these works is known as imprest cash account.	1 mark 1 mark 1 mark	4



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.2	(e)	<p>Define arbitration. State the qualities of arbitrator.</p> <p>Ans.</p> <p>Definition: During execution of work owner and contractor may come across situations where disputes may arise. The process of settling the dispute between owner and contractor is called as arbitration.</p> <p>The qualities of arbitrator are as follows:</p> <ol style="list-style-type: none">The arbitrator should be a person having experience of work.He should have in depth knowledge of work.He should know rules, procedures of law.Main thing is he should be impartial and acceptable to both parties.	<p>2 marks</p> <p>1 mark (Any two)</p>	<p>4</p>
	(f)	<p>State the points observed in filling the tender.</p> <p>Ans. Following points observed in filling the tender:</p> <ol style="list-style-type: none">The contractor should study the tender document carefully.The contractor visits the site.The contractor calculates the expenditure to be incurred for unremunerated work such as temporary store, office, approach road and water supply etc.The contractor works out the probable time period required for completing the works.The tender is signed; a cheque for deposit is enclosed and put into a sealed cover.	<p>1 mark each (Any four)</p>	<p>4</p>
Q.3		<p>Attempt any <u>FOUR</u>:</p>		<p>16</p>
	(a)	<p>Explain the situation when the lowest tender is rejected.</p> <p>Ans. The following are the situation when the lowest tender is rejected;</p> <ol style="list-style-type: none">When tender is not submitted in particular form sold by department.The lowest tenderer may lack in experience for work.Earnest money is not enclosed along with tender.Unsatisfactory reputation of lowest tender.In adequate finance to execute work.Inadequate connection of fair rates is not received.Tender is not signed by contractor.If any page is removed from document.If contractors is black listed by any department.	<p>1 mark each (Any four)</p>	<p>4</p>



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks															
Q.3	(b)	<p>Differentiate between percentage rate contract and item rate contract.</p> <p>Ans.</p> <table border="1"><thead><tr><th>Sr. No.</th><th>Percentage rate contract</th><th>Item rate contract</th></tr></thead><tbody><tr><td>1</td><td>In this contract, the contractor agrees to carry out the work at a certain percentage below or above the estimated cost.</td><td>In this contract, the contractor agrees to work as per the rates quoted by him for each item.</td></tr><tr><td>2</td><td>This is useful for the work of all nature with no item-wise rates.</td><td>This is useful when the quality of work is required and also quantities of work to be executed are not known previously.</td></tr><tr><td>3</td><td>Suitable for all type of government as well as private.</td><td>Suitable for most of public works executed by government departments.</td></tr><tr><td>4</td><td>It is easy to prepare comparative statement.</td><td>It is difficult to prepare comparative statement.</td></tr></tbody></table>	Sr. No.	Percentage rate contract	Item rate contract	1	In this contract, the contractor agrees to carry out the work at a certain percentage below or above the estimated cost.	In this contract, the contractor agrees to work as per the rates quoted by him for each item.	2	This is useful for the work of all nature with no item-wise rates.	This is useful when the quality of work is required and also quantities of work to be executed are not known previously.	3	Suitable for all type of government as well as private.	Suitable for most of public works executed by government departments.	4	It is easy to prepare comparative statement.	It is difficult to prepare comparative statement.	1 mark each	4
Sr. No.	Percentage rate contract	Item rate contract																	
1	In this contract, the contractor agrees to carry out the work at a certain percentage below or above the estimated cost.	In this contract, the contractor agrees to work as per the rates quoted by him for each item.																	
2	This is useful for the work of all nature with no item-wise rates.	This is useful when the quality of work is required and also quantities of work to be executed are not known previously.																	
3	Suitable for all type of government as well as private.	Suitable for most of public works executed by government departments.																	
4	It is easy to prepare comparative statement.	It is difficult to prepare comparative statement.																	
	(c)	<p>What is demolition contract? How is different from construction contract?</p> <p>Ans. <u>Demolition contract:</u> This type of contract includes the demolition and the removal of structure and its component parts and disposal of demolished material.</p> <p>This is the simplest type of contract in which the owner invites tender for demolition of an existing structure so that the particular land can be developed in any manner.</p> <p>It is different from construction contract due to following reasons:</p> <ol style="list-style-type: none">The contract is given to contractor who quotes higher amount, and contractor has to pay full amount before demolishing the existing structure.The contract must clearly state the contractor is responsible for making necessary arrangements for cutting off existing service connections of water supply drainage and electricityThe contractor should be asked to take insurance policies for labour and third party risk etc.	2 marks 1 mark each (Any two)	4															



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.3	d)	<p>State any four legal aspects of the specification. Ans. Legal aspects of the specification:</p> <ol style="list-style-type: none">On each page of specification, both the parties i.e. owner and contractor, should sign so that it will be binding on both the parties.If any disputes arise between the parties, the specification will help the arbitrator or the court to settle the disputes.The specification also mentions the mode of measurements, quality and procedure of item. So it is binding on both the parties to adhere to it.The general character and the scope of the work is illustrated and defined by the specifications and signed by both the parties. So it becomes a legal binding.	1 mark each	4
	e)	<p>Neatly draw the organisation setup of PWD. Ans. Organisation setup of PWD:</p> <pre>graph TD; PWD[PWD] --> SECRETARY[SECRETARY]; SECRETARY --> CE[CE]; CE --> SE1[SE]; CE --> SE2[SE]; CE --> SE3[SE]; CE --> SE4[SE]; SE1 --> EE1[EE]; SE1 --> EE2[EE]; SE1 --> EE3[EE]; SE2 --> AEE1[AEE / SDO / Dy. E.]; SE2 --> AEE2[AEE / SDO / Dy. E.]; SE3 --> JE1[JE]; SE3 --> JE2[JE]; SE3 --> JE3[JE]; SE4 --> SUPERVISOR1[SUPERVISIOR (Civil Engg. Asst.)]; SE4 --> SUPERVISOR2[SUPERVISIOR];</pre>	1 mark 1 mark 1 mark 1 mark	4



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.4	(A)	Attempt any THREE:		12
	(a)	Define i) Retention money ii) Mobilisation advance Ans. i) Retention money: Some amount is to be hold from the security deposit of contractor by the Engineer-in-charge, when there is any claim for the payment arises out of or under the contract against the contractor is called as "Retention Money". ii) Mobilization Advance: It is the amount of money given to the contractor for establishment purpose such as approach roads site office godown for storage material etc. is known as Mobilization Advance.	2 marks	4
	(b)	Specification state and explain the various types of it. Ans. Specification: A contract document specifying the quality of material to be used and procedure and method of workmanship to be adopted in the construction work is called as specification Following are the various types of specification: i. Brief specification ii. Detailed specification iii. Standard specification iv. Manufacturers specification (i) Brief specification: The general specification used for estimating the project is the brief specifications. The specification which gives the brief description of various items of work, specifying the materials, quantities, proportion of materials and gives general idea about the whole work. (ii) Detailed specification: The specification in which detailed information of the various quantities of materials, procedure of workmanship to be adopted, nature and class of work is mentioned. The details specification describes the item of work in details, accurately and complete in all respects in relation to the drawings of the work. (iii) Standard specification: Detailed specifications for various works are drawn up by an engineering department and these specifications are printed and used as a standard specification. Hence most of the items in works are made to standardized specifications. (iv) Manufacturers specifications: This type of specifications in which the properties of products such as strength, thickness, depth, elasticity, chemical composition etc. are mentioned.	2 marks 1 mark 1 mark 2 marks	4



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks															
Q.4	(c)	<p>Differentiate between cost plus percentage rate contract and cost plus fixed fee contract.</p> <p>Ans.</p> <table border="1"><thead><tr><th>Sr. No.</th><th>Cost plus percentage rate contract</th><th>Cost plus fixed fee contract</th></tr></thead><tbody><tr><td>1</td><td>In this type contractor is paid the actual cost of the work plus certain percentage.</td><td>In this type contractor is paid the actual cost of the work plus agreed lump sum amount</td></tr><tr><td>2</td><td>Contractor is assured of his profit so better quality of work is assured</td><td>As a fixed fee is paid to contractor, he tries to complete the work speedily.</td></tr><tr><td>3</td><td>The contractor has to keep all records for the cost of work for his payment</td><td>The contractor receives a fixed fee irrespective of the cost of work</td></tr><tr><td>4</td><td>The contractor is assured for his profit.</td><td>No incentive for the contractor to carry out work efficiently.</td></tr></tbody></table>	Sr. No.	Cost plus percentage rate contract	Cost plus fixed fee contract	1	In this type contractor is paid the actual cost of the work plus certain percentage.	In this type contractor is paid the actual cost of the work plus agreed lump sum amount	2	Contractor is assured of his profit so better quality of work is assured	As a fixed fee is paid to contractor, he tries to complete the work speedily.	3	The contractor has to keep all records for the cost of work for his payment	The contractor receives a fixed fee irrespective of the cost of work	4	The contractor is assured for his profit.	No incentive for the contractor to carry out work efficiently.	1 mark each	4
	Sr. No.	Cost plus percentage rate contract	Cost plus fixed fee contract																
1	In this type contractor is paid the actual cost of the work plus certain percentage.	In this type contractor is paid the actual cost of the work plus agreed lump sum amount																	
2	Contractor is assured of his profit so better quality of work is assured	As a fixed fee is paid to contractor, he tries to complete the work speedily.																	
3	The contractor has to keep all records for the cost of work for his payment	The contractor receives a fixed fee irrespective of the cost of work																	
4	The contractor is assured for his profit.	No incentive for the contractor to carry out work efficiently.																	
(d)	<p>State the meaning of salvage value and scrap value.</p> <p>Ans.</p> <p><u>Salvage value:</u></p> <p>It is the estimated value of a built up property at the end of its useful life without being dismantled.</p> <p>This is generally accounted by deducting the depreciation from its new cost.</p> <p><u>Scrap Value:</u></p> <p>It is the value dismantled materials of a property at the end of its utility period, and absolutely useless except for sale as scrap.</p> <p>When it applies to an old building which has outlived its useful span of life and repairing for reuse is not viable. The scrap value of a building is usually considered as 10 percent of the cost of construction.</p>	2 marks	4																
			2 marks																



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks																																																																						
Q.4	(B)	<p>Attempt any <u>ONE</u>:</p> <p>(a) State the classes of contractor. List of six important documents to be submitted for registration of contractor. Ans. Depending upon technical capability and financial status contractors are classified as under: For general work Class I : No limit Class II : upto 750 lacks Class III : 300 lacks Class IV : 150 lakhs Class IV A : 90 lacks Class V : 50 lakhs Class VI : 15 lakhs Class VII : 7 lakhs (Note: Above limits may vary department to department) The contractor has to submit the following documents along with his application:</p> <ol style="list-style-type: none"> 1. Latest income tax clearance certificate 2. Proof of financial status 3. Solvency certificate 4. List of machinery with their condition 5. List of technical staff employed along with qualification and experience 6. Professional capacity and experience certificate 7. Attested copies of partnership deed if any 8. Registration fee <p>(b) What is NMR? Draw the format of NMR. State any two precautions for writing in NMR. Ans. NMR: The muster roll which is maintained to keep the record of works being done by a labour employed on each day is called as Nominal Muster Roll. Format of NMR:</p> <div style="text-align: center;"> <p>Form No. 21 – Muster Roll Cash book voucher No. ...Date Name of work ... Part I – Nominal Roll</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 0 auto;"> <thead> <tr> <th rowspan="2">Category of labour</th> <th rowspan="2">Sl. No</th> <th rowspan="2">Name</th> <th rowspan="2">Father's name</th> <th colspan="6">Date ... Month</th> <th rowspan="2">Total</th> <th rowspan="2">Rate Rs. P.</th> <th rowspan="2">Amount Rs. P.</th> <th rowspan="2">Dated initial of paying officer</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr> <td colspan="4">Daily Total ...</td> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Initial of person making daily attendance</td> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Initial of inspecting officer</td> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Passed for Rs. (Rupees ...)</p> <p style="text-align: right;">Signature ... Rank ...</p> <table style="width: 100%; margin-top: 10px;"> <tr> <td>Grand total of muster roll ...</td> <td style="text-align: right;">Rs. P.</td> </tr> <tr> <td>Deduct – payment not made as per details</td> <td style="text-align: right;">... ...</td> </tr> <tr> <td>Transferred to register of arrears ...</td> <td style="text-align: right;">... ...</td> </tr> <tr> <td>Total amount paid in words rupees</td> <td style="text-align: right;">... ...</td> </tr> <tr> <td>Date Signature ... Rank ...</td> <td></td> </tr> </table> </div>	Category of labour	Sl. No	Name	Father's name	Date ... Month						Total	Rate Rs. P.	Amount Rs. P.	Dated initial of paying officer	1	2	3	4	5	6	Daily Total ...														Initial of person making daily attendance														Initial of inspecting officer														Grand total of muster roll ...	Rs. P.	Deduct – payment not made as per details	Transferred to register of arrears	Total amount paid in words rupees	Date Signature ... Rank ...	
Category of labour	Sl. No	Name					Father's name	Date ... Month									Total	Rate Rs. P.	Amount Rs. P.	Dated initial of paying officer																																																						
			1	2	3	4		5	6																																																																	
Daily Total ...																																																																										
Initial of person making daily attendance																																																																										
Initial of inspecting officer																																																																										
Grand total of muster roll ...	Rs. P.																																																																									
Deduct – payment not made as per details																																																																									
Transferred to register of arrears																																																																									
Total amount paid in words rupees																																																																									
Date Signature ... Rank ...																																																																										



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks												
Q.4	(B)	<p>Precautions for writing in NMR:</p> <ol style="list-style-type: none"> The sectional officer / S.A.E. in charge of the works should record the attendance of muster roll in part I daily at the time of roll call and check once during the day. The Assistant Engineer or the Executive Engineer should conduct surprise checks frequently to ensure the entries of workers. During making attendance in the Muster Roll, father's / husband's name of the labourers and workmen along with their permanent address should invariably be mentioned. If any wages remain unpaid details thereof should be recorded in Part II of the muster roll. In part III of the Muster Roll work done by the labourer and workmen employed on the muster roll should be recorded. The worker who has no permanent residences, the village or locality where they normally reside should be mentioned. 	1 mark each (any two)													
Q.5	(a)	<p>Attempt any TWO:</p> <p>Draft a tender notice for construction of new girls hostel building in Government Polytechnic Nanded costing Rs. 2 crores to be invited by E.E. (PWD)</p> <p>Ans.</p> <p style="text-align: center;">Tender Notice</p> <p>No: _____ Date: 27/05/2016</p> <p>Sealed item rate tenders are invited from Class II contractors registered with PWD for the work mentioned below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sr. No.</th> <th>Name of work</th> <th>Estimated cost</th> <th>Earnest money</th> <th>Security deposit</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Construction of new Girls Hostel</td> <td>Rs. 2 crores</td> <td>2,00,000/-</td> <td>18,00,000/-</td> <td>24 months (including monsoon)</td> </tr> </tbody> </table> <p>Blank tender form at non-refundable cost of Rs. 1000/- (Rs. 1100/- if required by post) can be obtained from the office secretary, Polytechnic institute, 10.00 a.m. to 5.00 p.m. during working hours of all working days (Except Sundays & Holidays) From 27/05/2016 to 2/06/2016. Tenders will be received in office of secretary up to 3.00 pm. On 2/06/2016. & shall be opened on the same day at 4.00 p.m. in presence of contractors who may like to attend.</p> <p>The authorities reserve the right to reject any or all tenders without assigning any reason.</p> <p style="text-align: right;">Sd/- Executive Engineer Building Division P.W.D</p>	Sr. No.	Name of work	Estimated cost	Earnest money	Security deposit	Time	1	Construction of new Girls Hostel	Rs. 2 crores	2,00,000/-	18,00,000/-	24 months (including monsoon)	2 marks	8
Sr. No.	Name of work	Estimated cost	Earnest money	Security deposit	Time											
1	Construction of new Girls Hostel	Rs. 2 crores	2,00,000/-	18,00,000/-	24 months (including monsoon)											
			2 marks													
			3 marks													
			1 mark													



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.5	(b)	<p>Define</p> <p>i) Value of a property. State its characteristics.</p> <p>ii) Explain factors affecting value.</p> <p>Ans.</p> <p>(i) Value of a property:</p> <p>Value is defined as the desirability of a thing, often in respect of some property such as usefulness or exchangeability; worth, merit, or importance.</p> <p>Characteristics of value:</p> <ol style="list-style-type: none">Value changes from place to place.Value depends upon life of building, location of property.Value changes with respect to the returns expected.Value changes according to law of demand & supply.Value is affected by natural disasters, riots etc.Value can be classified as market value, book value, and scrap value salvage value. <p>(ii) The factors affecting value of a property are:</p> <ol style="list-style-type: none">Forces of demand and supply: Few buyers as compared to a number of properties available for sale in a locality will result in low prices for the property and vice a versa.Cost of construction: The present cost of construction affects the value due to rapid change of price index in comparison with the rate of depreciation.Increase in population: Rise in population due to growth of new industries or influx or by multiplication will result in heavy demand of land, buildings and properties.Riots, war, flood and other natural calamities: Due to insecure conditions values may drop and remain so for a considerable period.Improvement of Public schemes: The taking up of any public schemes like sewer lines, water line, means of transportation will trend to make the area more attractive followed by increase in and value.Interest on Banks: by lowering the bank interest rates, more money will be available for investment in property and vice versa.Cost of labour.Inflation.Monopoly of a property in market.Location of property.Returns from property.Life and age of building.	<p>1 mark</p> <p>1 mark each (any three)</p> <p>1 mark each (any four)</p>	<p>8</p>



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.5	(c)	<p>A person purchases a plot measuring 680 sq.m. @ 900/- per sq.m. He constructs building having area 200 m² built up area. The cost of construction being Rs 12000/ m². He desires to have net return of 6 % on building cost and net return of 5 % on land cost. Assuming outgoing 22 % of gross income. Suggest suitable rent for the property.</p> <p>Ans.</p> <p>To find cost of land: Cost of land = 680 x 900 = Rs. 6,12,000/-</p> <p>To find cost of construction: Cost of construction = 200 x 12000 = Rs. 24,00,000/-</p> <p>To find net return: Net return on cost of land = 5/100 x 6,12,000 = Rs. 30,600/- Net return on cost of construction = 6/100 x 24,00,000 = Rs.1,44,000/-</p> <p>Outgoing = 22% of gross income = 0.22 x X</p> <p>To find gross rent per month: Net Income = Gross income – Outgoings Gross Income or rent = Net income or rent + Outgoings</p> $X = 174600 + 0.22X$ $X - 0.22X = 174600$ $X = 223846.15$ <p>Gross rent per annum = Rs. 2,23,846.15</p> <p>Gross rent per month = 2,23,846.15/12 = Rs. 18,653.85 Monthly rent for the property is Rs. 18,653.85/-</p>	<p>1 mark</p> <p>1 mark</p> <p>2 marks</p> <p>1 mark</p> <p>2 marks</p> <p>1 mark</p>	8



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.6	(a)	<p>Attempt any FOUR:</p> <p>Draft a detailed specification for external plastering in cm (1: 4) with 20 mm thickness of a new brick wall.</p> <p>Ans.</p> <p>(i)Material: Cement: Ordinary Portland cement shall be used .The cement shall conform to IS: 269 latest versions. Sand: Fine aggregate shall be natural sand obtained from a river bed and shall conform to IS: 383-1 and to the relevant portion of IS: 515-1959. Sand shall be clean, hard, strong, durable and free from organic matter, dust, clay, shale, alkali, salts, soft or flaky particles or other injurious substances. Water: Potable water shall be used for mixing the mortar.</p> <p>(ii)Proportion: Cement and sand shall be mixed in the proportion of one part of cement to four parts of sand. Mixing: Mortar shall be mixed in a mechanical mixer of an approved pattern at the site of work The drum shall be rotated for a minimum period of 2 minutes The mortar shall be used within 30 minutes of adding water or by hand mixing</p> <p>(iii)Plastering: The mortar shall be firmly applied on the surface from top to down and well pressed into the joints. The mortar shall then be rubbed and leveled with a flat wooden rule until a perfectly plane and even surface is achieved. All corners shall be finished to their angles, unless otherwise directed by the engineer: The jambs and reveals Of door and window openings shall be finished perpendicular to the sill and lintel bottom. Plastering shall be done in squares or strips as directed by the engineer. Strips or squares shall be so formed that day-to-day breaks are made to coincide with architectural breaks. Finish: While the plastered surface is fresh, a thick coat of cement slurry shall be applied and rubbed smooth. Curing: All plastered surfaces shall be kept continuously damp for -a period of 14 days.</p> <p>(iv)Mode of Measurements: The unit of measurement shall be the square meter as per IS: 1200.</p>	1 mark each	16 4



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.6	(b)	<p>Write the necessity of specification. Ans. <u>The necessity of specification:</u></p> <ol style="list-style-type: none">1. To give the required information for an item of work.2. To help the contractor in giving necessary quotation for work.3. To carry out supervision work effectively during construction.4. For necessary execution of the work.5. It protects the owner from any damage due to bad workmanship or low quality of material.6. Witness in the court to settle the disputes.7. To avoid extra items.	1 mark each (any four)	4
	(c)	<p>Define depreciation. State the various methods of calculating it. Explain any one method. Ans. <u>Depreciation:</u> Depreciation maybe defined as a loss in value or utility of property. The loss is due to wear and tear, decay, inadequacy and obsolescence <u>Methods of depreciation:</u></p> <ol style="list-style-type: none">i. Straight line methodii. Constant percentage method or declining Balance methodiii. Sinking fund methodiv. Quantity survey method. <p><u>i.Straight line method:</u> Assumption of this method is that the property loses its value by the same amount every year. A fixed amount of the original cost is deducted every year. So that at the end of utility period only the scrap value is left. Annual depreciation (D) = (Original cost - Scrap value) / (Life in years)</p> $D = (C - S) / N$ <p>OR</p> <p><u>ii. Constant percentage method:</u> In this method it is assumed that the property will lose its value by a constant percentage of its value at the beginning of every year. Depreciated factor (D) = $1 - (S/ C) 1/n$</p> <p>OR</p> <p><u>iii.Sinking fund method:</u> In this method, the depreciation of the property is assumed to be equal to the annual sinking fund plus the interest on the fund for that year, which is supposed to be invested on interest being investment.</p> <p>OR</p> <p><u>iv. Quantity survey method:</u> In this method, the property is studied in detail and loss in value due to life, wear and tear, decay, obsolescence etc. is worked out. Each and every step is based on some logical ground without any fixed percentage of the cost of property. Only experienced valuer can work out the amount of depreciation.</p>	1 mark 1/2 mark each 1 mark (any one)	4



Que. No.	Sub. Que.	Model Answers	Marks	Total Marks
Q.6	(d)	<p>Define i) Sinking fund ii) Define the term “Standard specification”</p> <p>Ans.</p> <p>i) Sinking fund: An amount which has to be kept aside at fixed intervals of time, out of the gross income so that at the end of the useful life of building, the fund should accumulate to the initial cost of the property is called as sinking fund.</p> $I = Si / (1 + i)^{n-1}$ <p>Where, S = amount of sinking fund i = rate of interval in decimal. n = number of years required to create sinking I = annual installment required</p> <p>ii) Standard Specification: Detailed specifications for various works are drawn up by an engineering department and these specifications are printed and used as a standard specification. Hence most of the items in works are made to standardized specifications.</p>	2 marks	4
	(e)	<p>A property fetches a monthly rent of Rs. 1200/- . The outgoing are as below sinking fund installation= Rs. 900/annum, repair = Rs. 1200 per year. Other outgoings = 15% of gross rent. Calculate the capitalised value of property, if rate of interest is 9%</p> <p>Ans. Monthly rent is Rs.1200/- Outgoings = Rs. 900/-(Sinking fund) + 1200 (Repair) + 15% of gross income Total outgoings = 900 + 1200 + 15% of X Let gross income is X Gross income = Net income + Outgoings (1200 x 12) = Net income + [900 + 1200 + (15/100 x 1200 x 12)] Net income = Rs. 10140/-</p> <p>Capitalised value = Net income x Years purchase = 10140 x (1/i) = 10140 x (1/0.09)</p> <p>Capitalised value = Rs. 112666/-</p>	1 mark 1 mark 1 mark	4