Name:	Index
	Candidate's signature
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## **BUNAMFAN CLUSTER EXAMINATIONS 2021**

#### 445/1

#### **METALWORK**

#### PAPER 1

December 2021

Time: 2 ½ Hours

#### INSTRUCTIONS TO CANDIDATES

- 1. Write your name and index number in the spaces provided
- 2. This paper consists of two sections: **A** and **B**. Answer all questions in section **A** and in Section **B**.
- 3. **Answer question 11 and any other three** in the spaces provided.
- 4. All dimensions are in millimeters unless otherwise stated.

#### For examiner's use only

Section	Question	Maximum score	Candidates score
A	1-10	40	
	11	15	
	12	15	
В	13	15	
	14	15	
	15	15	
		Total score	

This paper consists of 13 printed Pages

Candidates should check the question paper, to ensure that all the pages are printed as indicated; and no questions are missing

# www.freekcsepastpapers.com $\underline{SECTION\ A}$

# **ANSWER ALL QUESTIONS IN THIS SECTION**

<ol> <li>With respect to finishing of metal surfaces;</li> <li>(a) State two methods of applying paint.</li> </ol>	[2 marks]
(b) List <b>two</b> reasons for applying paint on metal articles.	[2 marks]
Art.	
2. (a) List <b>two</b> uses of drift in forging.	[2 marks]
ctip <sup>c</sup>	•••••
(h) Chata Ama a manari a manar	[2]]
	•••••
(b) State <b>two</b> precautions to be observed when twisting to avoid uneven twist.	•••••
or the	
ogles or t	
3. (a) Give <b>two</b> reasons for using hollow metals in making furniture.	[2 marks]
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	•••••
	•••••
(b) State <b>four</b> safety precautions to be observed when grinding.	[4 marks]
	•••••

4. (a) List <b>four</b> specifications of a rivet.	[4 marks]
(b) State <b>three</b> factors to consider when selecting spelter for brazing.	[3 marks]
g colft	
, a <sup>st</sup> t <sup>a</sup> g <sup>ar</sup>	
5. (a) List <b>four</b> methods of holding work piece on a lathe machine.	[4 marks]
on the well	
, date s	
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(b) State <b>two</b> reasons for knurling.	[2 marks]
age of the second secon	
6. (a) List <b>four</b> sources of information for related career choice in school setting.	

(b) State and explain three workshop records.	[3 marks]
7. (a) Explain the purpose of annealing.	[2 marks]
	GERAGE TO A PORT OF THE PROPERTY OF THE PROPER
i kiesk	&
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an an	
(b) Outline anealing process	[2 marks]
tris	
(b) Outline anealing process  (b) Outline anealing process	
Me.	
8. (a) State and explain three forging tools.	[3 marks]

www.freekcsepastpapers.com (b) State <b>two</b> disadvantages of		www.freekcsepastpapers.com [2 marks]
9. (a) State <b>two</b> advantages of	forging over machining.	[2 marks]
		is com
(b) Use sketches to describe the	ree types of tin snips.	[3 marks]
access more tre	forging over machining.  ree types of tin snips.	
10. Distinguish between:		
a) Gross pay and net pay.		[2 marks]

www.freekcsepastpapers.com b) Change and balance.	www.fr	reekcsepastpapers.com	www.freeko	csepastpapers.com [2 marks]
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•••••			•••••	•••••
•••••				
		ON B: [60 marks]		
Answer <b>question 11</b> on the A	A3 paper provi	ided and <b>any other th</b>	ree questions from	this section
in the spaces provided.				
Candidates are advised to sp 11. Figure 2 shows a drawin a)The front elevation thro b)The end elevation. c)The plan	end not more	than 25mins On auest	tion 11.	
11. Figure 2 shows a drawin	g isometric .E	Oraw the following in 1	st angle.	[15marks]
a)The front elevation thro	ough cutting p	lane X-X	10a2b	_
b)The end elevation.			asil	
c)The plan		, (ď	50X	
		*166/F		
		040 Mil.	T	
		N. N.		
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Sectional plane -	1//	OUT.	X	
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• •	1	F	RONT	
		NOTE		
	Figure 2	THE 20 mm DIA HOL	E RUNS THROUGH TO	
	1 18010 2		HE BASE RUNS ACRO	oss

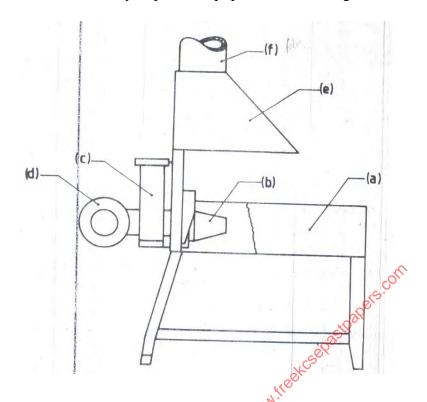
12. a) Name <b>three</b> methods of testing the quality of gas welded joints.	[1 ½ marks]
b) Sketch the correct flame for welding brass and outline the procedure of	setting the flame.
	[5 ½ marks]

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c) Use a labeled sketch to show an appropriate technique for gas welding thick plates and give **three** reasons for using the technique. [8marks]

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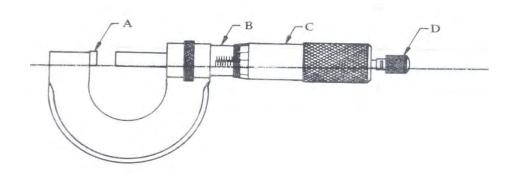
### 13. a)The figure below shows a very important equipment used in forgework.



[1 mark]	nis websit	Give the name of the equipment.	(i)
[1 ½ marks]	SOL	Sive the name of the equipment.  Name parts labeled $c$ , $e$ and $f$ .	(ii)
		, tion possible possi	
[1 ½ marks]		State the uses of parts $a$ , $b$ and $d$ .	(iii)
[4 marks]	e to a poorly brazed joint.	t <b>four</b> factors that would contribute	b) List

www.freekcsepastpapers.com	www.freekcsepastpapers.com www	w.freekcsepastpapers.com
c) State <b>three</b> differences between	en gas welding and brazing.	[3marks]
• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •
		•••••
1) 6' 6 6		F.4 1 3
d) Give <b>four</b> safety precautions	to be observed when tapping a through hole.	[4 marks]
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	جع ِ	<u>`</u>
	oels	
	a to a	
	ne following terms as applied in limits and fits.	
	NGC N	
	ries.	
14. a) Using sketches explain the	ne following terms as applied in limits and fits.	. [4 marks]
N NI amin al aina	ne following terms as applied in limits and fits.	
i) Nominal size	alosit.	
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	aper	
	at Pior	
ii) Tolerance	Que de la companya del companya de la companya de la companya del companya de la	
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<b>∞</b>		
iii) Allowance		
iv) Lower limit.		

b) The figure shows a precision tool used in metalwork.



i) Show how to find its accurac
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[1 mark)

ii) Name the parts labeled <i>A</i> , <i>B</i> , <i>C</i> and <i>D</i> and give the function of each.  c) Give <b>two</b> applications of each of the three types of fits.	[4 marks]
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o) of the time approximations of the time types of their	[6 1141115]

www.freekcsepastpapers.com d) State <b>three</b> safety precautions to	www.freekcsepastpapers.com be observed when using the vernier c	www.freekcsepastpapers.com calipers. [3 marks]
		•••••
15. a) Illustrate <b>five</b> operations that	can be performed on a drilling machi	ne. [5 marks]
	Loapers on this medsite man, treak csepasthal	pers.com
b) With reference to cutting externa	al threads:	
(i) Name <b>two</b> types of dies used		[2 marks]

(ii) State <b>two</b> reasons for using cutting oil.	[2 marks]
c) An M10 internal thread is to be cut in a mild steel. Given that the thread pitch is	
1.5mm, determine the size of the drill to be used.	[1mark]
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all electronic and the second	
d) Give <b>five</b> reasons why we finish metal articles.	[5 marks]
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